PAPER FOLIO:
ADOLESCENTS WITH MILD AND MODERATE MENTAL RETARDATION

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Paper One: Definition, Education Initiatives, and Learning Needs

Paper Two: Educational Environments

Paper Three: How well are their learning needs addressed in Newfoundland schools?

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Adolescents with Mild and Moderate Mental Retardation:

Definition, Educational Initiatives, and Learning Needs

Introduction

At a time when education reform and school realignment are occurring in Newfoundland it is increasingly important that educators not lose sight of the students in our schools who have special learning needs. One group of students, the adolescents with mild and moderate mental retardation, have such diverse learning needs that without appropriate learning environments in junior and senior high school these students will not be adequately prepared to function to their full potential in the years following school. The purpose of this paper is to provide educators with a better understanding of the learning needs of adolescents with mild and moderate mental retardation. In the first section of the paper, I will define mental retardation and identify the key initiatives in the education of individuals with mental retardation. Then, I will review the research on the cognitive and social-emotional development of adolescents with mild and moderate mental retardation. Finally, I will clearly state the implications of the research findings for the curriculum, instruction, and placement of these students within the school system.

Definition

The definition for mental retardation most commonly referred to in both medical and educational literature is taken from the *Diagnostic and Statistical Manual of Mental*

Disorders (4th Ed.) (American Psychiatric Association, 1994). The American Psychiatric Association (1994) considers three features essential for a diagnosis of mental retardation: significant sub-average general intellectual functioning, significant limitations in adaptive functioning, and the condition must occur before 18 years of age. Intellectual functioning is determined from an individually administered intelligence test, such as the Wechsler Intelligence Scales for Children-Revised, which provides an intelligence quotient (IQ) (American Psychiatric Association, 1994). An IQ score below 70 is considered significant sub-average intellectual functioning (American Psychiatric Association, 1994). However, the American Psychiatric Association (1994) maintains that among individuals who score an IQ below 70 there exist degrees of mental retardation that can be differentiated on the basis of the IQ. According to the American Psychiatric Association's classification system, an individual with mental retardation can be further distinguished as having mild, moderate, severe, and profound mental retardation. The degrees of mental retardation and the corresponding IQ ranges are described below:

Degree of Mental Retardation	IQ Score Range
Mild	50 - 70
Moderate	35 - 54
Severe	20 - 34

Profound	Below 20

The American Association on Mental Retardation (AAMR)(1992) questioned the value of further labeling individuals with mental retardation as mild, moderate, severe, and profound. It contended that such distinctions only serve to label individuals with mental retardation. Further, in an effort to counteract the effects of excessive labeling the AAMR's (1992) revised definition for mental retardation coincided with Luckasson et al. (1992) conception of mental retardation. According to Luckasson et al. (1992) the diagnostic process of mental retardation involved the following three steps:

(1) one diagnostic code of "mental retardation" is used if the person meets the three criteria of significant sub-average intellectual functioning, related limitations in two or more adaptive skill areas, and age of onset before 18 years

(2) describe the person's strengths and weaknesses using a multi-dimensional approach

(3) develop a profile of the supports the person needs across four dimensions (intellectual functioning and adaptive skills, psychological and emotional, physical/health/etiology, and environmental)

The most dramatic change in this diagnostic process of mental retardation was the elimination of the degrees of mental retardation, mild, moderate, severe, and profound. The AAMR (1992) wanted to provide a system of supports that would enable the individual with mental retardation to function as independently as possible in his environment regardless of

his level of mental retardation. The development of a system of supports for each individual with mental retardation might encourage educators to place more emphasis on assessing each individual's strengths and weaknesses in a variety of environments. Clearly, such a system of supports would benefit the individual with mental retardation but it would place great demands on both educators' time and education budgets. The AAMR's (1992) attempt to revise the diagnostic process of mental retardation to eliminate the degrees of mental retardation and to adopt a system of supports for individuals with mental retardation was the most recent initiative to improve the quality of life for individuals with mental retardation. However, the AAMR's (1992) acceptance of Luckasson et al.'s (1992) diagnostic process of mental retardation has been the subject of much criticism. Both Gresham, MacMillan, & Siperstein (1995) and Jacobson & Mulick (1996) felt that individuals with mild, moderate, severe, and profound mental retardation manifest characteristics that clearly distinguish the degrees of mental retardation and such distinctions assist educators in programming to meet their learning needs. Most educators appear to be more comfortable with the distinct categories of mental retardation and are reluctant to adopt the AAMR's (1992) diagnostic process (Gresham et al. 1995).

In order to be diagnosed with mental retardation the person's sub-average intellectual functioning must be accompanied by impaired adaptive functioning . Adaptive functioning refers to how well one copes in everyday life and impaired adaptive functioning is often the first indicator of mental retardation (American Psychiatric Association, 1994). Deficits must

be present in at least two of the following skill areas: communication, self-care, home living, social interpersonal skills, use of community resources, self-direction, functional academics, leisure, health and safety (American Psychiatric Association, 1994). The individual's performance in each of these skill areas must be accurately assessed because in most schools the individual's adaptive functioning is closely linked to his/her eligibility for special education services.

The accuracy of scores achieved on measures of adaptive functioning, such as the Vineland Adaptive Behavior Scale, have often been criticized when used to describe individuals with mild and moderate mental retardation (MacMillan, Gresham, & Siperstein, 1993). Unlike individuals with more severe mental retardation whose strengths and needs are fairly obvious, individuals with mild and moderate mental retardation need assessment measures that are very precise to avoid errors that make these adolescents "appear" more or less impaired than they are in the area of adaptive functioning (MacMillan et al. 1993). Jacobson & Mulick (1996) noted that there are more variations in adaptive behavior attainments among individuals with mild and moderate mental retardation than among individuals with severe and profound mental retardation. The wide range of differences in adaptive behavior attainments among adolescents with mild and moderate mental retardation could be "a consequence of childhood enrichment, educational experiences, socialization considerations, adult habilitative and prevocational experiences, presence of physical disabilities or impairments, and socioeconomic background" (Jacobson & Mulick, 1996, p.

16). The lack of more accurate adaptive functioning measurement tools could have serious implications for individuals in the upper levels of the mental retardation continuum. If such measures fail to identify the individual's needs accurately, the individual with mild and moderate mental retardation could be deprived of special education services. In my teaching experience, I have encountered many adolescents with mild and moderate mental retardation who have developed self-preservation mechanisms, such as aberrant behaviors to avoid revealing their failure to achieve academic success. Without appropriate interventions, educational opportunities for many of these adolescents, as well as others without mental retardation, might be seriously compromised as a result of the amount of instructional time educators lose dealing with the inappropriate classroom behaviors or chronic absenteeism presented by these students. These problems in the adolescent years could be averted if individuals with mild and moderate mental retardation are identified in the earlier years and their individual needs addressed through appropriate curriculum, instruction, and placement in the school system.

Special education services are often allocated for individuals according to their degree of mental retardation (mild, moderate, severe, and profound). When you consider the wide range of IQ scores (from 35 - 70) involved in the mild and moderate degrees of mental retardation, it is not difficult to understand the magnitude of the individual differences that might exist among adolescents with mild and moderate mental retardation. If the AAMR (1992) system of supports were to replace the sub-categories of mild,

moderate, severe, and profound mental retardation the detailed assessments used to determine the supports might make educators more aware of the individual differences. Over the past 50 years there have been many initiatives to improve educational opportunities for individuals with mental retardation. In the next section of the paper, I will briefly review some of the initiatives that have had a serious impact on the education of adolescents with mild and moderate mental retardation.

Education Initiatives

The education of individuals with mental retardation appears to have come full cycle from their total seclusion in institutions to total inclusion in community schools. Prior to World War II, it was rare in North America for an individual with mental retardation to attend public school and the most typical placement was custodial care in a state institution. However, during the Kennedy era from 1959-1968 the rights of individuals with mental retardation were given greater recognition and funding was made available to educate these individuals (MacMillan, Meyers, & Morrison, 1980). Prior to the acceptance of the American Association for Mental Deficiency's definition of borderline retardation, that is, individuals with an IQ of 80-85, many students were denied access to special education services and either remained in the general education classroom with no accommodations for their learning needs or dropped out of school at an early age. However, when individuals

with IQ between 80 - 85 were acknowledged as having special educational needs it resulted in an increase in the number of children labeled "Educable Mentally Retardate" (EMR) (presently known as mild mental retardation). Therefore, there was a tremendous increase in the number of students eligible for special programs (MacMillan et al. 1980). This IQ cutoff led to civil rights litigation over labeling since a disproportionate number of minority group students from lower socioeconomic backgrounds were classified as having borderline retardation due to inaccurate or culturally biased assessments (MacMillan et al. 1980). Consequently, the IQ cutoff for access to special education services was lowered to 75 in most states and even 70 in some states. As a result, classes for individuals labeled EMR were nearly depleted and vacancies were filled by lower functioning individuals who were previously labeled "Trainable Mentally Retarded" (TMR) (presently known as moderate mental retardation). Many students whose IQ bordered on 70 were left in the classroom and denied access to special programs.

The implementation of Public Law 94-142 in the United States in 1975 guaranteed all children the right to an education in the least restrictive environment (MacMillan et al. 1980). In Canada, the Amendment to the Education Act of Ontario (Bill 82) passed in 1980 influenced provincial education legislation across Canada. This legislation involved teaching all students in regular classes in neighborhood schools through appropriate instruction. Thus, in the early eighties there was a major shift toward the education of all children with mental retardation in special classes within community schools and wherever

possible in the classroom. More emphasis was placed on early identification, parental involvement, and individualized program plans for students with special needs. As a result of the increased accountability and documentation, teachers were reluctant to refer students with mild mental retardation for assessments for special education services (MacMillan et al. 1980).

The movement of all students with mental retardation into classrooms with their same age peers has been a controversial issue in Canada and the United States for the past two decades (Saint-Laurent, Fournier & Lessard, 1993). Students with severe and profound mental retardation have such obvious needs that curriculum, instruction, and placement issues are generally determined upon school entry and remain uncontested for the duration of their schooling. However, due to the fact that program decision makers are either unaware of, or oblivious to, the learning needs of adolescents with mild and moderate mental retardation, changes in special education policy usually affects these students more than students with more severe learning needs. The decreased level of supports and programs provided in some schools for adolescents with mild and moderate mental retardation suggests that educational opportunities are more determined by factors such as parental influence, advocacy groups, lawsuits, politics, and the economic climate at the time, than on sound research findings (Chow, 1996).

Summary

The definition for mental retardation has not changed since its' conception but the use of having sub-categories of mental retardation, such as mild, moderate, severe, and profound has been questioned. The AAMR (1992) contended that such sub-categories only contributed to further labeling and it suggested providing a system of supports for individuals with mental retardation based on the individual's needs. Although educators support the need for a system of supports for each student with mental retardation, they are more comfortable and prefer to use the profiles developed on these individuals within the sub-categories of mental retardation (Gresham et al. 1995).

There has been considerable improvement in the education of persons with mental retardation over the past 50 years but educators need to be aware of what researchers have learned about the functioning abilities of persons with mental retardation. How does the adolescent with mild and moderate mental retardation learn? Do they learn in a way that is significantly different from adolescents without mental retardation? What supports are needed to facilitate their learning? These questions need to be addressed if educators are to become better prepared to provide curriculum, instruction and placements that will enable these adolescents to develop to their full potential in the junior and senior high school years.

Cognitive Development

The cognitive development of adolescents with mild and moderate mental retardation will be discussed in relation to cognitive efficiency, strategic learning, knowledge base, motivation, and metacognition. To understand how adolescents with mild and moderate mental retardation learn, it is helpful to consider first the cognitive ability adolescents without mental retardation bring to learning in the school setting. By the time adolescents without mental retardation reach the upper elementary and junior high school grades they are accustomed to the demands of both teachers and the curriculum and they have become more sophisticated learners. They have discovered that the acquisition of new knowledge and skills depends on their ability to attend to instruction and to actively construct relationships between new material and past learning (Wittrock, 1989). Learning in the school environment is greatly reliant on language-based activities. These students have realized that learning new material often involves effort and as a result they have developed a repertoire of learning strategies, such as rehearsal and organizational skills, to help them cope with the increasing learning demands (Weinstein & Mayer, 1986). These strategies allow them a degree of control over their cognitive processing and enhance their ability to learn new material. For example, when encountering new material students must first be able to focus on the new material, identify the relevant aspects, hold that information in working memory while simultaneously accessing long-term memory to make connections

between the new material and past learning. When new learning is incorporated into long-term memory students must have the ability to generalize from one learning situation to the next (Wittrock, 1989). The junior high school curriculum places increasingly more emphasis on problem-solving that requires students to apply basic principles to complex issues and to justify their opinion (Bender, 1996). Adolescents encounter numerous challenges and the curriculum offers learning experiences that are meant to increase knowledge, as well as develop the students' self-confidence in their abilities to learn and solve problems.

By adolescence most students without mental retardation have had successful experiences in both academics and peer relationships. They have internalized the value of success which later serves as both a motivator to continue to strive for success and as a source of improved feelings of self-worth. Adolescents without mental retardation are usually motivated to learn. They realize that learning requires effort and believe that they can learn if they approach the learning experience in a strategic way. Most adolescents without mental retardation have achieved some degree of independence and can control what and how they learn. They are developing metacognitively, that is they are becoming more aware of the cognitive processes involved in learning and how they can enhance their own learning. Their success enhances their self-worth and motivates them to remain enthusiastic about learning and school.

Cognitive Efficiency

The cognitive processes of adolescents with mild and moderate mental retardation appear to be less efficient and effective than the cognitive processes of their peers when they enter upper elementary and junior high school. Depending on the degree of mental retardation, the cognitive processing of these adolescents may be anywhere from two to four grade-levels behind that of their peers. Adolescents with mild and moderate mental retardation do not acquire new knowledge and skills as easily as adolescents without mental retardation (Brown, 1974; Cherkes-Julkowski & Gertner, 1989). They may have difficulty focusing in the classroom due to both shorter attention spans and difficulty ignoring classroom distractions, such as uncooperative students, pencil sharpening, talking, etc.. As a result of these attention problems, adolescents with mild and moderate mental retardation either misinterpret or fail to understand many concepts discussed in the classrooms. Clearly, they need educational environments where their attention difficulties are addressed.

Strategic Cognition

The curriculum in the upper elementary and junior high school is more complicated and moves at a faster pace than in the primary and elementary grades, exceeding the information-processing abilities of adolescents with mild and moderate mental retardation

(Ferretti & Cavalier, 1991; Wenz-Gross & Siperstein, 1996). Besides attention difficulties, these students have not acquired sophisticated learning strategies, such as rehearsal and organization (Brown, 1974), which could enable them to hold new information in short term memory while accessing long term memory to connect the new information with previous learning. Unfortunately, adolescents with mild and moderate mental retardation have less knowledge and fewer strategies to retrieve knowledge than adolescents without mental retardation (Cherkes-Julkowski & Gertner, 1989). It may be that so much of their attention must be devoted to either interpreting the written word or comprehending oral instructions that much of the new information is lost or confused before it has been processed (Cherkes-Julkowski & Gertner, 1989).

These adolescents have difficulty distinguishing between relevant and irrelevant information. Their failure to organize input into manageable units of information contributes to poor recall. Forness & Kavale (1993) reported that adolescents with mild and moderate mental retardation reduced their memory and learning deficits when either the new materials was presented more effectively or the students were pre-trained to use strategies to enhance learning or memory. The benefits of strategy instruction and training tended to decrease as the level of mental retardation increased (Forness & Kavale, 1993). However, the results were greatest for those who began instruction and training at an early age and continued for a long time regardless of level of mental retardation. Vicari, Albertini & Caltagirone (1992) and Baroody (1996) emphasized that individual differences within the developmental levels

allow some students to benefit from strategy instruction and training more than others. It is clear that the strategic capabilities of these students should be addressed in school.

Knowledge –

In many cases, there are gaps in the students' background knowledge needed to comprehend the new materials (Gersten & Baker, 1998). The gaps in background knowledge may have resulted in part from the time the students spent out of the classroom in the earlier years of schooling to access small-group instruction to develop basic reading, writing, and arithmetic skills. However, even with the additional drill and practice many of these students have not developed either an adequate sight-vocabulary in reading or automaticity with basic addition and subtraction facts in arithmetic. The extra time allotted these students for small group instruction by the special education teacher is often scheduled for example, during science or social studies periods in the classroom (Carlson & O'Reilly, 1996). Consequently, the students are sometimes absent from the classroom when science and social studies concepts are introduced and due to their already limited ability they may not be able to catch up in these curriculum areas. Obviously, to insure these students do not have gaps in the knowledge base needed in these subject areas, the curriculum outcomes will need to be modified to accommodate the missed instruction.

It may be that adolescents with mild and moderate mental retardation would benefit more now than in the earlier school years from instruction on the basic skills, such as automaticity of basic addition and subtraction facts (Podell, Tournaki-Rein & Lin, 1992) and seriation and classification (Perry, Pasnak, Holt, 1992). Their cognitive processes in the adolescent years may be more developed and more responsive to such instruction. Basic skills learned at a higher rate of proficiency tend to facilitate higher order learning (Hasselbring, Goin, & Bransford, 1987). Similarly, it is only in the adolescent years that some of these students are capable of benefitting from linguistic analysis instruction, such as sound-symbol relationships demanded in the phonics approach to word identification (Gottardo & Rubin,1991). Although there was considerable time spent on basic skills in the earlier years, it may be the case that at an earlier mental age these students were unable to benefit from this instruction. The challenge for educators is to provide age-appropriate learning experiences that will help these adolescents acquire and consolidate the basic skills and knowledge they need without demeaning their feelings of self-worth by using child-like activities.

Motivation

Unlike typical adolescents without mental retardation, many adolescents with mild and moderate mental retardation are not particularly motivated to learn. They have

developed negative attribution patterns that are not conducive to learning (Turner, Dofny, & Dutka, 1994). Their tendency to withdraw from cognitively demanding learning situations may be the result of a history of failure throughout their school life (Gersten & Baker, 1998). Many report feeling "stupid" and refuse to apply the effort needed to bring about success. Such feelings contribute to what Bandura (1982) considered the individual's self-efficacy development. Bandura (1982) defined self-efficacy as "a person's judgement of her or his ability to perform an activity, and the effect this perception has on the on-going and future conduct of the activity" (p. 123). According to Bandura (1982) children who have high self-efficacy feel failure results from lack of effort and will persist in working harder to achieve success. On the contrary, children who have low self-efficacy feel failure results from insufficient ability and they have no control over the situation. Thus, how the students' feel about their ability will affect their motivation to acquire skills and knowledge. They believe that they are unable to learn and this belief is reinforced by the low learning expectation held by both parents and teachers. Most individuals with mild and moderate mental retardation have experienced failure in both academics and peer relationships prior to being identified as having mental retardation (Turner et al. 1994). Educators should be cognizant of the fact that repeated successes raise self-efficacy, whereas failures lower it (Schunk, 1985). If such is the case, adolescents with mild and moderate mental retardation are clearly in need of curriculum, instruction, and school placements that will provide successful learning experiences and raise their feelings of self-efficacy.

Metacognition

Adolescents with mild and moderate mental retardation are very much aware that their academic achievements lag behind that of their peers without mental retardation. However, they do not understand why they are not achieving and what they can do to achieve to their full potential. Metacognition has been used to explain why children at different ages deal differently with learning tasks. According to Flavell (1976), "Metacognition refers to one's knowledge concerning one's own cognitive processes or anything related to them, e.g. the learning-relevant properties of information or data. For example, I am engaging in metacognition if I notice that I am having more trouble learning A than B; if it strikes me that I should double check C before accepting it as fact" (p. 232). In adolescents without mental retardation metacognition often helps to explain why younger and less able students experience difficulty in academic areas, such as reading and mathematics. For example, in reading comprehension tasks poor readers who failed to attend to context cues improved their reading comprehension when they were instructed to monitor their reading with self-questioning, such as: What is the story about? or What is happening in this picture? Metacognition also influences the achievement of adolescents with mild and moderate mental retardation in academic areas (Baker, 1994). As children get older they develop new strategies for thinking, they demonstrate more awareness of their thinking (Duell, 1986). In all studies of metacognition the general finding has been that

students who are most successful in a subject area exhibit higher levels of metacognitive knowledge about the subject area and are more skilled at regulating their cognitive processes (Baker, 1994). Brown (1987) suggested that metacognitive development can be facilitated by the use of teaching strategies that "encourage the child to plan, to coordinate his or her ongoing activity, and to evaluate his or her progress" (Baker, 1994, p. 215). Clearly, adolescents with mild and moderate mental retardation need and would benefit from deliberate instruction in metacognition.

Overall, the cognitive-processing difficulties experienced by adolescents with mild and moderate mental retardation indicate that appropriate educational environments (ie. curriculum, instruction, and placement) must address attention difficulties, information processing, learning strategies, metacognition, and motivational issues. These learning needs have been identified in the research findings and should be addressed as early as possible when these adolescents begin their junior and senior high school education. In the next part of the paper, I will discuss the research findings related to the social-emotional development of adolescents with mild and moderate mental retardation.

Social-Emotional Development

Educators need to understand the social-emotional development of adolescents with mild and moderate mental retardation. Factors related to their social-emotional development

may have an impact on their social relationships, problem-solving, and social skills. The adolescent years are a crucial period when children develop peer friendships that will eventually contribute to their self-esteem and the shaping of their identity. It is a time when students move toward becoming "self-determining" persons (Wehmeyer, 1992). Most adolescents without mental retardation begin to break away from parental control, question authority, and seek advice from their friends. Their quest for independence requires decision-making and problem-solving which depends on their ability to make decisions based on knowledge gained from past learning experiences. Adolescents with mild and moderate mental retardation are ill-prepared for and need assistance with managing the academic, social, and developmental demands of adolescence (Wenz-Gross & Siperstein, 1996).

Social Relationships

Adolescents with mild and moderate mental retardation possess fewer and less sophisticated social skills than adolescents without mental retardation (Bradley & Meredith, 1991; Healey & Masterpasqua, 1992). They experience difficulty building and maintaining peer relationships. They are either poorly accepted or rejected by their peers without mental retardation (Gresham & MacMillan, 1997). They frequently report feeling isolated from their peers and relying on family and adults more than friends for companionship (Wenz-

Gross & Siperstein, 1996). Friendships formed with peers who do not have mental retardation occur only in the school setting and do not carry any great social impact (Siperstein & Leffert, 1997). In many cases, these friendships are superficial and do not extend beyond the exchange of pleasantries.

The structure of the social relationships of adolescents with mild and moderate mental retardation is similar to the social relationships that develop among non-handicapped children of the same mental age in elementary schools (Siperstein & Bak, 1989). Like non-handicapped children of the same mental age, these adolescents are selective about whom they chose as friends and there are adolescents who could easily be distinguished as either popular or rejected. These adolescents appear to "enter" a stage at a later age and remain longer in that stage than adolescents without mental retardation (Bradley & Meredith, 1991).

The lack of positive interpersonal peer relationships can have a negative impact on the students' feelings of self worth. Educational programs for adolescents with mild and moderate mental retardation must address factors that influence interpersonal relationships. The research has shown that adolescents with mild and moderate mental retardation are not aware of why they provoke peer rejection (Adams & Markham, 1991). For example, these adolescents frequently fail to respond appropriately to others' non-verbal responses, such as facial expressions. However, Stewart & Singh (1995) improved both the recognition and production of facial expressions of emotions of adolescents with mild and moderate mental retardation by directed rehearsal of basic facial expressions of emotions.

Problem-solving and Social Skills

In order to build and maintain interpersonal relationships, adolescents with mild and moderate mental retardation must learn both good problem-solving skills and good social skills (Castles & Glass, 1986). Educators must help these adolescents realize the difference between knowing problem-solving skills and using appropriate social skills. Problem-solving skills refer to deciding on the most appropriate response to a given situation but students must become more aware of the social skills needed to deliver the response in an effective manner. Clearly, inappropriate interpersonal cognitive problem-solving must be addressed during the pre-adolescent and adolescent years. A strong focus on interpersonal cognitive problem-solving skills during the adolescent years would provide more time to encourage generalization of the learned skills before these adolescents transition into the community.

Deficient social competence associated with mental retardation can result in long term negative consequences, such as lowered chances of adjustment into the community, continued labeling as having mental retardation, and slower cognitive growth due to fewer exchanges of ideas that would normally transpire from more positive interpersonal interactions. Clearly, interpersonal skills are crucial to their adjustment and success in community settings (Langone, Clees, Oxford, Malone, & Ross, 1995). If the goal of education is to prepare students to live independent, productive lives, then clearly, increasing

their social competence should be given greater priority in educational plans for students with mild and moderate mental retardation. Educators must provide explicit social skills instruction (Hailenbeck & Kaufman, 1995). Overall, the social-emotional functioning of adolescents with mild and moderate mental retardation indicates that they need educational environments where emphasis is placed on both problem-solving skills and social skills that would enable these adolescents to build and maintain positive interpersonal relationships.

Summary

Adolescents with mild and moderate mental retardation, that is, individuals with an IQ between 35 and 70, represent the largest categorization of mental retardation and those with the most variation in learning needs among individuals with mental retardation. When these adolescents enter the higher grades (junior and senior high school) academic learning and maintaining interpersonal peer relationships places greater demands on their limited cognitive processing abilities. Although a wide range of individual differences exist within this group of students, a number of common learning needs were identified in the research and these learning needs should be considered by educators developing educational programs. The common learning needs associated with the cognitive-processing and social-emotional development of adolescents with mild and moderate mental retardation include the following:

(a) a short attention span

(b) slow information processing

(c) few learning and memory strategies

(d) little or no metacognitive awareness

(e) poor motivation to learn

(f)difficulty building and maintaining peer relationships

(g) an apparent unwillingness to accept responsibility for their own lives

Clearly, if these adolescents are to experience success in school, their learning needs must be identified early and addressed through appropriate learning environments. In the next paper I will review the research findings regarding the curriculum, instruction, and placements needed in order to provide the most effective learning environment.

Adolescents with Mild and Moderate Mental Retardation:

Educational Environments

Introduction

Adolescents with mild and moderate mental retardation learn in a way that is similar to adolescents without mental retardation but they learn at a slower pace and cannot be expected to reach the same level of expertise (Bradley & Meredith, 1991). The research findings discussed in the first paper found that although individual differences exist among adolescents with mild and moderate mental retardation their progress in school is seriously hampered by inefficient and ineffective cognitive processing abilities. In general, their learning is affected by problems associated with attention, slow information-processing, failure to use learning and memory strategies, lack of metacognitive awareness, and being poorly motivated to learn. Their success in school is further compromised by the difficulties they experience building and maintaining peer relationships and accepting responsibility for their own lives. These cognitive processing difficulties and social-emotional deficits need to be acknowledged by educators and accommodated through the provision of appropriate learning environments in school.

This paper will examine three aspects of the students' learning environment, curriculum, instruction, and placement, and how each can be improved to address the learning needs of adolescents with mild and moderate mental retardation. For the context of this paper, curriculum refers to "what" the student is taught, instruction refers to "how" the student is taught, and placement refers to "where" the student is taught. Although each

will be discussed separately, some overlap is unavoidable due to the interrelatedness of curriculum/instruction and placement in education. Sometimes the curriculum is actually the instruction, for example, to address attention problems the students are instructed to use a "self-instruction" technique which will be described later in this paper. In this case the "self-instruction" technique is the curriculum, although mastery of the technique relies on the effectiveness of the instruction.

Curriculum

Educators are constantly pressured to find appropriate curriculum to address the learning needs of adolescents with mild and moderate mental retardation. The curriculum for adolescents without mental retardation is prescribed in accordance with each grade level and will be referred to as the "prescribed curriculum" throughout this paper. However, educators responsible for addressing the learning needs of adolescents with mild and moderate mental retardation will be involved in selecting the curriculum to address these learning needs. In this part of the paper, I will discuss the curriculum that researchers recommend for addressing the learning needs of these adolescents, associated with attention problems, information-processing, learning strategies, metacognitive skills, motivation, social competence and social problem-solving skills.

Individualized Education Program

Educators in the United States and in many Canadian provinces are required to develop an Individualized Educational Plan (IEP), sometimes referred to as an Individualized Program Plan (IPP) or Individualized Support Services Plan (ISSP) for each adolescent with mild and moderate mental retardation receiving special education services (Bender, 1996). The purpose of the IEP is to insure that each student's learning needs are identified and addressed through appropriate learning environments. The IEP should include the student's current level of functioning, long-term goals expected to be achieved during the year, short-term objectives to help achieve the goals, beginning and ending dates of the services, the amount of time the student will be included in the general education program, the special education services required, and the evaluation procedures (Turnbull, Strickland, & Hammer 1978b). Each component of the IEP will not be discussed in this paper but it is important to note that the goals and objectives outlined in the IEP resulted from a thorough assessment of the student's learning needs. In theory, the IEP represents the ideal approach to addressing the student's learning needs but in reality, given the little time educators can allot to each student, the effectiveness of the IEP has been questioned. Just what types of goals and objectives should be emphasized in the IEPs developed for adolescents with mild and moderate mental retardation?

Adaptations and Modifications

Presently, most adolescents with mild and some adolescents with moderate mental retardation remain in the classroom and have their learning needs addressed through adaptations and modifications to the prescribed curriculum (Scott, Vitale, & Masten, 1998; Bender, 1996; Jacobsen & Sawatsky, 1993). Adaptations involve "adjusting the form of input or output of the student's information and knowledge" (Jacobsen & Sawatsky, 1993, p.64). For example, when the student's ability to process new information is hampered by poor reading ability, a curriculum adaptation would entail reading the text aloud to the student (input). Also, the student whose motor skills impede the writing process may require written responses to be dictated to a scribe or recorded on a cassette tape. Adaptations to the curriculum enable adolescents with mild and moderate mental retardation to participate in and learn some age appropriate information and knowledge. The adaptations and modifications should be student specific and developed after careful consideration of the student's specific needs and cognitive potential (Jacobsen & Sawatsky, 1993).

Modifications, on the other hand, require "a significant change in content, quantity or complexity of information" (Jacobsen & Sawatsky, 1993, p.64). Some of the typical modifications to the curriculum to accommodate the learning needs of these adolescents would include lowering the conceptual level of understanding expected, the amount of factual information, and the vocabulary used in the text. The number of curriculum

outcomes may need to be reduced to provide the extra time these students need for repetition and hands-on-learning-experiences to consolidate new learning. Due to the fact that these adolescents learn at a slower pace there is already less time in which more must be accomplished (Knowlton, 1998). Educators will need to prioritize the concepts and select only the concepts that are most relevant in the lives of the students. However, these adolescents can and should be expected to learn most concepts at a less sophisticated level. In essence, the curriculum for these adolescents would be less broad, more concrete, or presented at a slower pace than for adolescents without retardation.

Educators should exercise caution when implementing curriculum adaptations and modifications so as not to contribute to the students' developing a false impression of their cognitive abilities and consequently unrealistic expectations for future academic success. To avoid misconceptions of the student's cognitive abilities, the student's IEP must clearly specify the adaptations and modifications implemented to help the student achieve the curriculum outcomes. Most schools require that the IEP is signed by all members of the planning team, including the student.

Alternate Curriculum

Most adolescents with moderate mental retardation and some adolescents with mild mental retardation are unable to cope with the prescribed curriculum, even after adaptations

and modifications have been implemented. After careful consideration of the student's individual needs it may be decided that an alternate curriculum, that is a curriculum with goals and objectives other than those contained in the prescribed curriculum, is required. Also, many of the learning needs identified in the research cannot be addressed simply by adaptations and modifications to the prescribed curriculum. Instead, these adolescents will require goals and objectives in their IEPs that focus specifically on the problems they experience with basic reading and mathematics, learning strategies, metacognitive skills, motivation, social competence, and social problem-solving.

Reading and Mathematics

Adolescents with mild and moderate mental retardation frequently need an alternate reading and mathematics curriculum. A continued emphasis on reading skills and math concepts is appropriate in the upper elementary and junior high grades because the cognitive processing abilities of these adolescents may be developed enough in the adolescent years for them to benefit from a curriculum on basic skills in reading (phonics, word-attack skills, sight words, etc.) and mathematics (number concepts, automaticity of addition and subtraction facts, etc.) (Podell et al. 1992). Combining drill and practice of basic academic skills and functional skills, such as handling money, reading schedules, measurement, real-life reading experiences, etc., will increase the students' engagement in these learning tasks.

Their motivation to acquire both word analysis skills to improve their reading, and automaticity of the basic math computations for problem-solving, might increase when they begin to realize that these skills are needed to achieve independence in real life situations. If the long-term goal of education is to enable these adolescents to function as independently as possible in their everyday living, then it makes good sense to integrate the basic skills with the functional skills the adolescent will need for independent living.

Functional Skills

Presently, the amount of emphasis on the functional skills component of the curriculum for adolescents with mild and moderate mental retardation is often influenced by the parent's perception of their child's ability (Logan & Malone, 1998; Hamre-Nietupski, 1993). Some parents are comfortable with a more functional curriculum while others feel education is about academics, and believe that functional skills such as handling money, grocery shopping, food preparation, etc., should be taught at home (Logan & Malone, 1998). Educators should respect the parents' views and work with them to develop a balanced curriculum that addresses the students' learning needs and insures their successful transition from the school into the community.

Vocational Skills

The present curriculum for these adolescents does not place enough emphasis on the connection between what they are learning in school, and future work environments (Mastropieri, Scruggs, & Butcher, 1997; Bender, 1996; Smith & Puccini, 1995). To better prepare adolescents with mild and moderate mental retardation for the years following high school, vocational education should be a part of their curriculum. In the earlier grades the curriculum focused on increasing their career awareness but in the adolescent years these students need to become aware of their career orientation and be directed toward appropriate job clusters (Bender, 1996). Once students become aware of their career orientation the academic work can be related to their chosen job cluster or clusters and more information can be provided on the job cluster. As students see the connection between learning and future work opportunities they should become more motivated and produce better academic performance (Bender, 1996). The present curriculum in the upper elementary and junior high grades does not help adolescents with mild and moderate mental retardation develop career orientations. It could be that the increased emphasis on mainstreaming and the acquisition of subject specific knowledge diminishes the opportunities for developing vocational skills at this grade level. When these adolescents enter high school the curriculum for vocational education should include vocational training to help the them acquire the skills needed in future work environments.

The emphasis on the basic academics, math and reading, should continue to be addressed in the students' IEPs but in the context of functional skills and vocational skills. However, the present IEPs developed for adolescents with mild and moderate mental retardation are often limited to academics (Epstein, Polloway, Patton, & Foley, 1989). These adolescents have other learning needs that need to be addressed in their IEPs, namely, learning strategies, metacognitive skills, motivation, and social competence.

Learning Strategies

Adolescents with mild and moderate mental retardation were considered "non-strategic" learners until Ferretti (1994) found that they have more strategy capabilities than implied by the quite substantial literature on strategy deficiencies (Bray, Saarnio, & Hawk, 1994). By the time children with mental retardation enter the adolescent years they have acquired some learning strategies to help them cope in school (Bray et al. 1994). Weinstein & Mayer (1986) defined learning strategies as the behaviors and thoughts that a learner engages in during learning that are intended to enhance the learner's encoding process. Adolescents with mild and moderate mental retardation needs to refine their existing strategies and become aware of and skillful in using learning strategies to enable them to organize, elaborate, and make predictions about new information. According to Ferretti (1994), educators should change the focus from teaching a general learning strategy's

curriculum to first determining the student's individual competencies. Strategy instruction and training built on the students' competencies have a greater chance of success than instruction and training in learning strategies designed to remediate their deficiencies (Ferretti, 1994).

To improve their cognitive processing abilities adolescents with mild or moderate mental retardation will need a repertoire of learning strategies, such as rehearsal, clustering, elaboration, and imagery. Adolescents with mild or moderate mental retardation must be capable of understanding the strategy and the reason for it, as well as being capable of and willing to take responsibility for mastery of the strategy (Bender, 1996). Improvement in learning that results from successfully applying learning strategies should have a positive effect on students' motivation to learn. Conceivably, the benefits of learning strategy instruction and training may be greater for students with mild mental retardation than for students with moderate mental retardation. However, very little direct teaching and training in learning strategies is given by either the special education teacher or the classroom teacher (Borkowski, Carr, Rellinger, & Pressley, 1990). The lack of emphasis on learning strategies exists because educators are either unaware of the benefits of instruction and training in learning strategies or they are not confident in their ability to teach learning strategies. As these adolescents develop a repertoire of learning strategies they need to become more knowledgeable about "how" the learning strategies can improve their ability to learn in all learning situations.

Metacognition

In the past, either the lack of a repertoire of learning strategies or the failure to apply learning strategies has contributed to adolescents with mild and moderate mental retardation being described as "passive" learners. Learning occurs when the learner makes a connection between new knowledge and previously acquired knowledge (Wittrock, 1989; Weinstein & Mayer, 1986). These adolescents must develop an awareness of both the cognitive processes involved in successful learning and how this awareness of cognition, that is metacognition, can enhance their learning capacity.

Metacognition is often used to explain why younger and less able students experience difficulty in academic areas, such as reading and mathematics (Baker, 1994). As children get older they develop new strategies for thinking and they demonstrate more awareness of their thinking processes (Duell, 1986). The capacity for self-regulation has been considered the "heart of metacognition" (Borkowski et al. 1992). In all studies of metacognition, the general finding has been that the most successful students were those who exhibited both higher levels of metacognitive knowledge about the domain and more skill at regulating their cognitive processes (Baker, 1994). Surely, considering how "passive" adolescents with mild and moderate mental retardation are in the learning process, metacognitive training should be an essential element of the curriculum. Metacognitive awareness would allow students some control over learning and would increase the

likelihood of students transferring and generalizing learning. Unfortunately, despite the research findings clearly indicating a severe deficit in this area, the present curriculum for adolescents with mild and moderate mental retardation does not place enough emphasis on metacognitive development. It may be that educators either do not think these adolescents will benefit from such instruction or they themselves are not confident in how to teach metacognitive skills.

Metacognitive skills may be taught as an entity in itself or incorporated into all domains of the curriculum. The general feeling is that metacognitive skills should be taught in context rather than as a separate curriculum series (Baker, 1994). However, some adolescents with mild mental retardation and most adolescents with moderate mental retardation will need explicit instruction and training in metacognition. It has been speculated that most children develop metacognitive knowledge and skills on their own through daily experiences at home and in school. However, adolescents with mild and moderate mental retardation have not acquired these skills through simply being exposed to environmental cues, and may not at all without direct intervention. Brown (1987) suggested that "metacognitive development can be facilitated by the use of specific types of adult teaching strategies, including those that encourage the child to plan, to coordinate his or her ongoing activity and to evaluate his or her progress" (Baker, 1994, p. 215). Perhaps, if educators were made aware of effective curriculum endeavors used to teach metacognitive skills to adolescents with mild and moderate mental retardation, then they

would be able to incorporate these into the curriculum. Metacognitive skills would equip these adolescents with strategies that they could use throughout their schooling (Baker, 1994).

Motivation

When many adolescents with mild and moderate mental retardation enter upper elementary and junior high school they are already poorly motivated to learn (Wenz-Gross & Siperstein, 1998). They have begun to realize that effort alone is not enough to help them achieve success and they continue to fall further and further behind their peers without mental retardation. They have developed what Bandura (1982) referred to as a negative attribution pattern. As a result of such thoughts, these students do not expect success, are less persistent, and fail to generate task strategies (Yasutake, Bryan, & Dohrn, 1996). Consequently, they might withdraw from cognitively challenging tasks and select only tasks they know will bring success.

These adolescents will need first to be made aware of how this type of thinking interferes with learning, and then taught ways to alter their negative attribution pattern. There has been success altering self-perceptions of competence in relation to academics, behavior, athletic abilities, and physical appearances, through a combination of attribution training and peer tutoring. When the assigned tasks are within the students' ability level or

zone of proximal development, as well as inherently interesting, the students are very likely to be motivated to tackle the task (Dev, 1997). However, the task should also be challenging enough to stimulate their desire to attain mastery. Adolescents who are sure of some level of success, are more likely to be motivated to tackle the task than students who are unsure of the outcome (Adelman & Taylor, 1990). Adolescents with mild and moderate mental retardation should experience greater success in academic and interpersonal relationships when they learn strategies to improve encoding and recall, become more aware of their cognitive processes, and gain more social competence. Presently, there is not nearly enough emphasis on attribution training in the curriculum for these adolescents.

Adolescents with mild and moderate mental retardation realize that they do not learn as quickly as their peers, but they are seldom encouraged to talk about their feelings or helped to develop a positive self-image. Wehmeyer (1992) informed educators that, "To promote the development of realistic efficacy expectations, students need instruction in the recognition and identification of physical and psychological needs, how these are met, how they influence actions, and how to access resources related to these needs if they lack these skills" (p.308). Further, he commented that students should be encouraged to express their own interests, beliefs, and values, as well as their own unique abilities and limitations. Since adolescents with mild and moderate mental retardation rarely exercise an age appropriate degree of self-advocacy and personal control over their lives, there is a need to teach them self-determination skills (Lamorey & Leigh, 1996). Self-determination can be

developed by making personal safety skills training, individual rights education, assertiveness training, communication skills training, social skills training, sex education, and self-defense training a part of their curriculum (Lamorey & Leigh, 1996). These curriculum packages are readily available to educators but implementing such a curriculum is often delayed by problems related to staffing shortages and students' class schedules.

Social Competence and Social Problem Solving

Adolescents with mild and moderate mental retardation lack appropriate interpersonal skills and social problem-solving skills needed for achieving successful interpersonal relationships. For example, the difficulty they experience building and maintaining peer relationships often results from their failure to respond appropriately to nonverbal cues, such as facial expressions, and not realizing how their facial expressions affect others. But their recognition of, and production of facial expressions can improve when given direct rehearsal of basic facial expressions of emotions (Stewart & Singh, 1995). The IEPs developed for these adolescents should include goals and objectives related specifically to interpreting facial expressions.

The social skills' curriculum should emphasize the skills these adolescents need to increase their social competence. Vaughn, McIntosh, & Spencer-Rowe (1991) identified four interdependent factors that should be considered by educators developing the social

skills curriculum. First, the students' deficits in social skills knowledge must be identified and appropriate interventions implemented. Second, students experiencing problems developing relationships with peers, need structured interactions to help improve peer acceptance and friendships (Bishop & Jubala, 1994). Third, these students need to improve both their ability to interpret social dialogue and to understand the feelings, motivations, and behaviors of themselves and others (Vaughn & Hogan, 1994). Fourth, students with serious behavior problems or maladaptive behaviors, such as uncontrollable nose dripping or no self-control, will need individualized behavior management programs to develop their awareness of the negative effects such behaviors have on their peers and ultimately on their social interactions with them. Since adolescents with mild and moderate mental retardation learn at a slower pace, it is imperative that the social skills' curriculum receive adequate attention in the upper elementary and junior high grades. These students have enough problems related to academic achievement, without unnecessary rejection due to inappropriate social skills. Without an appropriate social skills curriculum these adolescents will be at a disadvantage in later years when self-directed social/vocational skills play an important role in their successful transition into both community living and employment (Rosenthal-Malek & Yoshida, 1994).

As well as social skills, adolescents with mild and moderate mental retardation must learn social problem-solving skills (Castles & Glass, 1986). Educators should help these adolescents understand the difference between social problem-solving skills and social

skills. Social problem-solving skills involve deciding on the most appropriate response in a given situation, social skills relate more to delivering the response in an appropriate manner (Castles & Glass, 1986). Many of the skills needed to achieve social growth (choosing playmates, deciding on an activity to play, and when to play with someone) develop from experiences during independent social interactions. If these adolescents are equipped with an effective way of dealing with problems that occur during social interactions, then providing structured opportunities for these adolescents to make such choices may be enough to foster social competence (Rosenthal-Malek & Yoshida, 1994).

Cognitive Process Approach

As adolescents with mild and moderate mental retardation mature, a cognitive-process approach for the teaching of social skills has resulted in greater generalization of the skills than the traditional approaches which emphasized the teaching of typical responses to common social situations (Rosenthal-Malek & Yoshida, 1994). McFall (1982) proposed a "process training" approach that taught students a generative process of social behavior rather than specific component behaviors. The "process training" approach involves teaching the students four steps that can be applied to any social situation. The steps are as follows:

(1) Decoding - the student must interpret the meaning of the social situation

(2) Deciding - the student describes the possible alternate ways of handling the social situation

(3) Performing - the student selects one of the alternatives and responds to the social situation

(4) Evaluation - after responding to the social situation, the student evaluates his/her performance

Process training is an example of an approach to the teaching of social skills that relies on receptive and expressive language but has been found to be an appropriate strategy for adolescents with mild and moderate mental retardation (Collet-Klingenberg & Chadsey-Rusch, 1991). It is considered a generative process because it equips students with a process that, once mastered, can be generic to all social situations. Unlike other interventions that focus on teaching students to make simple responses to non-complex situations, the "process training" approach forces students to be active participants in learning (Collet-Klingenberg & Chadsey-Rusch, 1991). As one student commented, "We had to think so hard during training."

Self-Interrogation

Brown (1978, 1987) used a similar approach to training social skills, one that incorporates a "self-interrogation" questioning procedure. The self-interrogation procedure includes questions that stimulate the thinking processes, such as:

(1) "Stop and Think!"

(2) "What (or who) do I want to play with?"

(3) "What will happen if I do _____?"

(4) "How do I feel (happy, sad, or angry)?"

(5) "How does my friend feel (happy, sad, or angry)?"

(6) "What (or who) else could I play with?" (Rosenthal-Malek & Yoshida, 1994).

Self-interrogation used effectively will equip students with a social problem-solving technique such as accepting feedback, resisting peer pressure, and following directions that could be used in social situations. At the very least, it encourages adolescents to "Stop and Think" before responding in interpersonal encounters.

The cognitive process approach was effectively used to teach social skills to adolescents with mild and moderate mental retardation but particularly for those who were motivated to learn, had higher IQ, and better language skills (Collet-Klingenberg & Chadsey-Rusch, 1991). These adolescents need a social skills' curriculum that teaches them

"how" to interpret a social situation and "how" to respond in an appropriate manner. It makes good sense to invest in an approach that encourages students to learn a "process" that could be applied in all social situations. Initially, instruction for cognitive process approaches will require small group and possibly individualized instruction but to facilitate the transfer and generalization of the skill these students will need to be integrated into the classroom. It seems reasonable to assume that equipping these adolescents with such social problem-solving techniques will have a positive effect on their self-confidence and their motivation to learn.

Summary

Presently, the learning needs of most adolescents with mild and moderate mental retardation are being addressed through adaptations and modifications of the prescribed curriculum used in the classroom. The focus on IEPs indicates that educators are very much aware of the variety of individual differences in the learning needs that exist among these adolescents, especially in the areas of reading and mathematics. However, despite the research findings having stressed a need to address learning strategies, metacognitive skills, motivational issues, and social competence, there is little evidence in the present curriculum to suggest educators are even aware of such learning needs.

A curriculum that addresses the learning needs of adolescents with mild and moderate mental retardation will increase their motivation to learn (Dev, 1997; Adelman & Taylor, 1990). Clearly, the curriculum for these adolescents will need to include instruction and training in learning strategies, and metacognition to encourage the students' active involvement in the learning process. The research findings have demonstrated that direct instruction and training in learning strategies and metacognition has been successful when used with these students. If these adolescents are to become "active" learners, then the curriculum in the upper elementary and junior high school years should be developed around the learning needs researchers have identified. Otherwise, these adolescents are being deprived of the opportunity to develop to their full potential and will continue to be referred to as "passive" learners.

Instruction

To address the learning needs of adolescents with mild and moderate mental retardation, educators must be knowledgeable about and willing to use instructional strategies that encourage these students to become actively involved in the learning process (Mercer, Lane, Jordan, Allsopp, and Eisele, 1996). Bender (1996) provided the following synopsis of effective teaching behaviors that should be adopted by all educators and used when instructing all students:

1) providing ample opportunity for students to learn

2) monitoring the students' time on task and difficulties experienced

3) communicating the task expectations to the students

4) making the students accountable for homework, assignments, etc.

5) giving frequent feedback

6) asking low-level and high-level questions

7) using a combination of small and whole group instruction

The instructional strategies employed by educators can motivate adolescents to learn. Researchers have found that the type of instruction the students receive is of even greater importance than the size of the group (Jacobson & Mulick, 1996). A common finding in much of the research on instruction is that instructional strategies found effective for addressing the learning needs of adolescents with mild and moderate mental retardation in the classroom enrich the learning environments for all students (Saint-Laurent, Dionne, Giasson, Royer, Simard, & Pierard, 1998; Carlson & O'Reilly, 1996; Stanovich, 1996; Giangreco, Dennis, Cloninger, Edelman, & Schattman, 1993; Larrivee, 1986). In this section of the paper, I will discuss the instructional strategies that researchers recommend teachers use to effectively address the learning needs of adolescents with mild and moderate mental retardation: individualized instruction, small-group instruction, whole-class/group instruction, collaborative/cooperative teaching, metacognitive instruction, and computer-based instruction.

Individualized Instruction

The very nature of special education and the current use of IEPs are often interpreted to mean that instruction should be individualized. However, an IEP means the student's education plan is developed around the student's learning needs but it does not mean that the student will have these learning needs addressed through individualized instruction. On the contrary, many of the student's learning needs, such as social skills development, are better taught when the student is a member of either a small group or the whole class. Vaughn, Moody, & Schuum (1998) suggested that the whole concept of one-to-one instruction needs to be rethought because in many schools special education teachers are expected to meet the needs of "small classes" of students at one time. However, there will be times when individualized instruction is needed and many special education teachers have been able to provide some degree of individualized instruction through the use of a task card approach to instruction

A task card listing the tasks the student is expected to complete during the day or week, depending on the amount of time the student is scheduled with the special education teacher, is prepared for every student. Each task card contains simple instructions outlining the activities the student is to complete first, second, and so forth, during the instructional period. The teacher moves from one student to another assisting students as needed, praising, providing corrective feedback, and prompting the student to begin the next task.

In the beginning of the year, the teacher will need to work through the task card approach slowly with the students until they learn to be responsible for their own work. Once in place, the task card approach (1) permits the teacher to work with individual students while monitoring the class, (2) encourages the students to be responsible for their own work and in doing so might enhance their self-concept, and (3) enables the students to progress at their own pace rather than being held back by students who are slow to do their work (Bender, 1996).

Small Group Instruction

For a long time it was thought that one-to-one instruction was the best practice for instructing adolescents with mild and moderate mental retardation but researchers have found group instruction to be more conducive to facilitating social interactions and modeling opportunities (Jacobson & Mulick, 1996). The size and composition of the group can vary (usually 4-5 students) depending on whether the small group instruction occurs in the classroom or an alternate setting. Small group instruction can work in conjunction with the task card approach described above by assigning group instruction for a period on each student's task card. Small group instruction is recommended for introducing new topics, working on group projects, and discussing issues pertaining to social skills, feelings, social relationships, and problem solving (Bender, 1996). Also, students learn from the mistakes

of others if corrective feedback is given in a supportive manner. In many schools, the learning needs of adolescents with mild and moderate mental retardation are addressed through small-group instruction that emphasizes a remediation approach.

In the remediation approach, a small group of students with about the same ability (homogeneous grouping) receive instruction from the special education teacher at scheduled times throughout the day. During remediation the emphasis is on basic academic skills and strategies that would enable the students to cope with the prescribed curriculum in the classroom (Zigmond & Baker, 1996). Educators using the remediation approach have been criticized for focusing on the students' deficits without identifying their strengths, failing to teach skills that can be generalized to other environments, and addressing academics to the exclusion of practical skills (Jacobson & Mulick, 1996). Although remediation benefits students by enabling them to function in the classroom, it does not address students' other learning needs associated with metacognitive skills, motivation, and social competence. The remediation approach alone can not address the learning needs of adolescents with mild and moderate mental retardation. However, instruction that uses a combination of remediation and other more effective instructional approaches with a small group will have a greater likelihood of addressing the learning needs of these adolescents.

Whole Class/Group Instruction

Whole class/group instruction refers to using the same materials without differentiation to instruct all students in the room at the same time. Some educators justify using whole class instruction because it avoids stigmatizing adolescents with mild and moderate mental retardation (Vaughn et al. 1998). But, educators who rely solely on whole class instruction will experience great difficulty addressing the learning needs of these adolescents. In whole class/group instruction educators use a combination of explicit and implicit instruction. Explicit instruction refers to the teacher clearly presenting the skills or concepts in a manner that encourages student mastery. Explicit instruction is recommended for students who have insufficient prior knowledge and difficulties learning (Mercer et al. 1996) and adolescents with mild and moderate mental retardation fit this profile. In implicit instruction the teacher facilitates students' learning by creating situations in which the students can discover new knowledge and construct their own meaning (Mercer et al. 1996). Implicit instruction is commonly referred to as either guided discovery or inductive thinking, and is frequently used in the junior and senior Science classes (Mastropieri, Scruggs, & Butcher, 1997). The research findings do not support the guided discovery approach for adolescents with mild and moderate mental retardation because these adolescents tend to withdraw from cognitively demanding situations (Gersten & Baker, 1998). However, this behavior was found to decrease when these students were given

explicit instruction in the key concepts that underline the scientific or mathematical materials prior to the discovery learning session (Gersten & Baker, 1998).

Traditionally, whole class/group instruction has been the norm in education but the movement toward educating adolescents with mild and moderate mental retardation in the classroom, places greater demands on the general education teacher to employ a variety of instructional strategies (deBettencourt, 1999). Educators will need to combine their expertise in whole-class/group instruction with other instructional strategies to address the learning needs of all students. Surprisingly, many educators have met the challenge and have had tremendous success designing instructional groupings within the classroom which encourage greater student involvement in learning and better social interactions among the students (King-Sears & Cummings, 1996; Brown & Campione, 1994).

Collaborative Teaching

The degree of success adolescents with mild and moderate mental retardation experience in the classroom will depend on the teacher's use of appropriate instructional strategies and the effectiveness of the collaboration between the classroom teacher and the special education teacher. The special education teacher is usually expected to have a better understanding of the student's learning needs and can suggest to classroom teachers how best to address these needs in the classroom. The classroom teacher might be expected to

be more knowledgeable than the special education teacher about subject content and classroom management skills. Together the special education teacher and the classroom teacher have an abundance of expertise which could enable them to effectively address the student's learning needs and in doing so enrich the learning environment for all students. However, without such collaboration, classroom teachers who are poorly trained to teach adolescents with mild and moderate mental retardation may contribute to their low self-efficacy development by having low learning expectations for them (Klassen, 1994).

Cooperative Teaching or Co-Teaching

In cooperative teaching or co-teaching the classroom teacher and the special education teacher jointly teach a class that includes a number of adolescents with mild and moderate mental retardation (Carlson & O'Reilly, 1996). Both teachers are responsible for planning and delivering the curriculum to the entire class. Cooperative teaching that encourages teachers to draw from their teaching expertise has the potential to enrich the learning environments for all students. On a broader scale, cooperative teaching might help get rid of the dual education system (special education and classroom teachers working independently of one another) that presently exists (Bender, 1996).

Cooperative Learning Groups

Within the whole class the teacher identifies small heterogeneous (mixed ability) groups of students (usually 3-5 students per group) to work together on an assigned project or task (Schniedewind & Salend, 1987). The work is structured such that each student in the group has to participate to accomplish the goal. The aim of cooperative learning is to make students more responsible for their own learning and to encourage the integration of adolescents with mild and moderate mental retardation in the classroom. All studies of cooperative learning reported improvements in the social relationships among all students in the classroom (Bender, 1996).

Cognitive Apprenticeship Approach

The cognitive apprenticeship approach suggested by Collins, Brown, & Newman (1989) provides a framework for learning that would facilitate metacognitive development for adolescents with mild and moderate mental retardation and provide enriched learning environment for all students. Based on the philosophy underlying apprenticeship in the workplace, a classroom learning environment that adopts a cognitive apprenticeship approach facilitates the students' acquisition of both cognitive skills and metacognitive skills by observing experts perform in reading, writing, and mathematics. Collins et al. (1989)

stressed the importance of providing cognitive apprenticeship in reading, writing, and mathematics because these subject areas provided the foundation for learning and communication in other school subjects and engaged the cognitive and metacognitive processes needed for more general learning and thinking. To help the learner understand the cognitive processes involved in a particular skill the expert should model or think aloud what goes on in his or her thoughts while learning. These adolescents need to realize that success in each domain results from the cognitive and metacognitive strategies one employs, and from their sub-skills and factual information (Collins et al. 1989). Educators need to provide learning experiences which are challenging but within the cognitive processing abilities of the student or as Vygotsky (1978) said, the student's zone of proximal development.

Cognitive apprenticeship provides guidance for the learner in the form of modeling, coaching, scaffolding and fading until the learner acquires the skill and uses it independently (Collins et al. 1989). The coach can be either the teacher or an expert student and his or her role is to provide the scaffolding or supports (reminders) the student needs to achieve success. Cognitive apprenticeship encourages two strategies that have been found to promote students' active involvement in learning: cooperative learning and reciprocal teaching. As well as conducive to achieving academic learning goals, this approach offers many opportunities to improve social skills. Unfortunately, cognitive apprenticeship and other instructional approaches based on the belief that a community of learners exists within each

classroom, are seldom used in educational environments (Logan & Malone, 1998). Surprisingly, researchers have observed that classroom teachers made greater use than special education teachers of cooperative activities and academic peer interactions (Gelzherser, McLane, Meyers, & Pruzek, 1998; Helmstetter, Curry, Brennan, & Sampson-Saul, 1998).

Metacognitive Instruction

Instruction specifically designed to make students more aware of the thinking processes involved in learning is known as metacognitive instruction (Bender, 1996). Moely et al. (1992) observed infrequent provision of "metacognitively oriented" instruction in the classroom. Similarly, in other studies teachers were found to rely heavily on rote learning methods and to engage in very little instruction with the potential to foster metacognitive development (Baker, 1994). Even at the high school level there are few courses that foster metacognitive growth (Rohwer & Thomas, 1989).

Rohwer & Thomas (1989) suggested that metacognitive skills, as well as learning strategies, are facilitated in situations where students have control over and responsibility for their own learning. However, whole class/group instruction and didactic teaching (teacher dominated instruction) remain the most popular instructional method. The most powerful avenue for change is at the level of teacher training and this appears to be

happening. Through classroom observations, Kurtz, Schneider, Carr, Borkowski, & Rellinger (1990) learned that novice teachers engaged in metacognitive instruction more than experienced teachers. Two of the most developed models of metacognitive instruction are learning strategies instruction and self-monitoring instruction (Bender, 1996). Reciprocal teaching is another metacognitive instructional approach designed to promote metacognitive understanding of reading material through structured dialogue (Palincsar & Brown, 1986, 1987).

Learning Strategies Instruction

Researchers have developed many mnemonic devices that assist students to both comprehend the academic task and to plan the steps needed to complete the task (Bender, 1996). Instruction in learning strategies should take place in either individualized or small group instruction but once mastered the student should apply the strategy in all learning environments. Bender (1996) outlined the following eight steps that should be used for effective learning strategy instruction:

1) pretest and student commitment to learning the strategy

2) model the strategy

3) verbal rehearsal of the strategy

4) practice with controlled materials

5) practice on grade appropriate materials

6) student commitment to generalize the learning strategy

7) generalization and maintenance of the learning strategy

Further explanation of each step and a case study illustrating the strategy instruction is provided in Bender's text.

Self-Monitoring Instruction

Self-monitoring refers to the ability to check one's own task-oriented behaviors in order to bring about a positive change in these behaviors (Bender, 1996). To address the attention problems of adolescents with mild and moderate mental retardation, educators usually monitor the students very closely. But, McCarl, Svobody, & Beare (1991) claim that through a combination of close monitoring of the student and a metacognitive emphasis on inner language these adolescents can be taught to monitor their own attending behaviors in class. Through a series of training sessions the student is made aware of "how" to pay attention and how to monitor himself by asking himself the simple question, "Am I paying attention?" Self-monitoring has had successful results when used with students who demonstrate attention problems, such as poor task orientation and an inability to complete worksheets on time (Hallahan & Lloyd, 1987). Students should be expected to apply self-monitoring in both small group and whole group instruction but it has been most beneficial

when used by students involved in independent drill-and-practice on concepts the students understand but normally would not complete because of attention problems (Hallahan & Lloyd, 1987). Self-monitoring used in conjunction with the task card approach has the potential to provide increased opportunities for the special education teacher to provide individualized instruction.

Reciprocal Teaching

Reciprocal teaching was designed to improve reading comprehension and has great potential for use with adolescents with mild and moderate mental retardation. In reciprocal teaching the teacher and students take turns playing the role of teacher. This instructional approach emphasizes modeling and coaching students in four strategic skills: formulating questions based on the text, summarizing the text, making predictions about what will come next, and clarifying difficulties with the text (Collins et al. 1989). These strategies are fundamental in the development of reading comprehension and both special education teachers and classroom teachers have attempted to embed these skills into their student's repertoire of strategies. However, the key element in this approach may have been the reciprocal (turn taking) nature of the strategy and in most applications of this approach, that has been omitted. Originally, Palincsar & Brown's (1984) success using "reciprocal" teaching stressed the importance of the turn-taking role of the teacher. It was the reciprocal

nature of the approach that forced the students to be actively involved in the learning process. The classroom teacher's questioning might be sufficient for adolescents without mental retardation but adolescents with mild and moderate mental retardation would benefit more from encouragement to be active participants in the process and to observe their peers formulate questions.

Computer-Based Instruction

Computer-based instruction has been found effective in the domains of reading, writing, mathematics, vocational skills, and other functional skills when used as a supplement to traditional instruction provided by the teacher (Bender, 1996). The unique features of computer based instruction, such as wait-time, immediate feedback, multimodal presentation, and adaptive devices, has the potential to provide enhanced instruction for adolescents with mild and moderate mental retardation (Keene & Davey, 1987). The fact that the student is actively involved in using the computer and has some control over the learning situation, can increase his or her motivation to stay on task. Students using computer based instruction demonstrated a stronger desire to repeat a learning task than students in other traditional instruction groups (Keene & Davey, 1987). All researchers cautioned educators to have an understanding of appropriate software evaluation procedures and to insure the software matches the learning needs of the student (Bender, 1996)

Summary

To address the learning needs of adolescents with mild and moderate mental retardation educators will need to employ a variety of instructional strategies, such as, individualized instruction, small group instruction, whole class/group instruction, collaborative/cooperative teaching, metacognitive instruction, and computer-based instruction. The most successful instructional practices for students with mild and moderate mental retardation are those that entertain high levels of successful student involvement, more individualized instructional arrangement groupings, and frequent performance feedback. Educators who use effective instructional strategies will not only address the learning needs of adolescents with mild and moderate mental retardation but will enrich the learning environments for all students. As McDonnell (1998) commented, researchers and practitioners must view learning as the combined effect of instructional methods used for all students in the class and those used to meet the special needs of students.

Placement

The most controversial issue surrounding appropriate learning environments for adolescents with mild and moderate mental retardation is placement. Little, Williams, Ward, Fraser, & Churchill (1991) noted that in regard to special education there appears to

be a lack of agreement among decision makers "of what should be done with whom, by whom, with what, at what time, in what way, and in what place" (p.1). Although slightly exaggerated, their comment often describes what transpires at the school level in respect to placement. Presently, there are no guidelines to dictate the most appropriate placements for students with mild and moderate mental retardation and most placement decisions in the schools throughout the United States and Canada are suppose to be determined at the student's IEP team meeting. However, many placement decisions are influenced by teachers' attitudes, pressure from advocacy groups, economics, and the political climate at the time. As a result, many classroom teachers are now taking on more responsibility for addressing the learning needs of these adolescents in the classroom (Chow, 1996). Are the learning needs of adolescents with mild and moderate mental retardation effectively addressed in the classroom? Or, would their learning needs be better addressed through other placement options? In this section I will discuss the current placements used to address the learning needs of adolescents with mild and moderate mental retardation. Specifically, I will examine the placement of these students in self-contained classrooms, resource rooms, general education classrooms, and combined services.

Self-Contained Classrooms

Self-contained classrooms are operated by the special education teacher and were once the only placement option for adolescents with mild and moderate mental retardation. However, today with the emphasis on the integration of these adolescents into general education classrooms, the self-contained classroom is only one of many placement options. The curriculum content used in the self-contained classroom will vary according to the needs of the student but the schedule follows a predetermined plan which accommodates both whole group and individualized instruction (Bender, 1996). The self-contained classroom is still an appropriate placement for students whose learning needs warrant such a placement.

Researchers have found that due to both poor student role models and lower expectations in the self-contained classroom, academic growth is lower than that of adolescents with mild and moderate mental retardation accommodated in the general education classrooms (Bender, 1996). In the United States and Canada, all students have the right to be educated in the least restrictive environment and educators have both a moral and legal responsibility to insure the student has been given every opportunity and every support to receive instruction in the general education classroom, or a combination of the general education classroom and the resource room, before being placed in a self-contained classroom (Bender, 1996). According to the research reviewed in the first paper, self-contained classrooms would not be an appropriate placement for adolescents with mild mental retardation and could only be considered for some adolescents at the lower end of

moderate mental retardation. Adolescents with mild and moderate mental retardation will need individualized and small group instruction in the initial stages of learning but integration into the classroom is key to the transfer and generalization of learning strategies, metacognitive skills and social-emotional development.

Resource Rooms

The resource room or the special education classroom (sometimes referred to as "pull out" service) is the instructional setting most commonly used to address the learning needs of adolescents with mild and moderate mental retardation (Saint-Laurent et al. 1998). Students (usually homogeneous groups) go to the resource room for one or two periods a day where they receive either individualized or small group instruction from the special education teacher. Since the curricular emphasis in the resource room is generally similar to the curriculum used in the classroom it is essential that the special education teacher and classroom teacher collaborate closely to provide an appropriate education program for these students (Carlson & O'Reilly, 1996; Zigmond & Baker, 1996; Stanovich, 1996; Bauwens & Korinek, 1993).

Resource rooms have the potential to provide superior opportunities in respect to appropriate curriculum, maximized engagement and time on task, specialized instructional strategies and specially trained persons who can advocate on behalf of the students (Scruggs

& Mastropieri, 1995). The homogenous, small group instruction provided in the resource room allows the adolescent with mild and moderate mental retardation some degree of privacy in which to have his or her learning needs addressed. For example, instruction on basic reading skills and math concepts is more appropriately given in the resource room to avoid embarrassing the student and further damaging his or her feelings of self-worth. Also, adolescents with mild and moderate mental retardation require explicit instruction and training to acquire learning strategies, metacognitive skills, and social skills.

According to Carlson & O'Reilly (1996) "pull out" models of special education service delivery, such as the resource room, have been criticized for:

(1) stigmatizing students

(2) disrupting instruction in the general education classroom

(3) scheduling for pull out taking preference over scheduling in the general education classroom

(4) students missing important class time that is difficult to make up

(5) lack of coordination among services and service providers

(6) offering a fragmented program

Adolescents with mild mental retardation have reported two main concerns about receiving instruction in the special education classroom: (1) the academics were low-level, repetitive and not challenging and (2) the stigma might lower their status and cause them to lose friends (Spencer & Garrick-Duhaney, 1999). The negative concerns about resource room

placement appear to be related to the curriculum used in the resource room and the lack of collaboration between the special education teacher and the classroom teacher. Such findings imply that there is a lack of understanding of the true learning needs of adolescents with mild and moderate mental retardation and teachers lack effective collaboration skills.

General Education Classroom

The increasing cost of providing special education "pull out" programs and possibly the negativism surrounding resource room placement has led to adolescents with mild and moderate mental retardation spending more and more time in the classroom (Fuchs & Fuchs, 1994). It seems that adolescents with mild and moderate mental retardation are exposed to more instruction and address more academic content in the classroom than in the special education classroom (Helmstetter et al. 1998). The heterogenous groupings that exist in the classroom have the potential to offer the ideal environment in which to foster metacognitive growth and social-emotional development. For example, instructional approaches, such as cognitive apprenticeship and cooperative learning can be effective in classrooms where teachers accept and encourage diversity among students. Unfortunately, there is still an over reliance on traditional instructional strategies that do little to address these learning needs. Although research has shown that placement in the classroom provides appropriate social role models and these adolescents do not suffer academically, there is still

great concern among professional groups that supportive services may not be provided (Bender, 1996).

The amount of integration in the classroom is usually individually determined but most students with mild mental retardation have potential for successful integration (Nesbit, 1994). Some adolescents with mild and most adolescents with moderate mental retardation will require full time paraprofessionals (student assistants) to help them cope with the academic demands of the prescribed curriculum used in the classroom. Further, this placement option should be first discussed with the adolescents with mild and moderate mental retardation because in specific grade levels they are reluctant to accept help in certain placements (Klassen, 1994). Their success in the classroom will depend on modifications, such as the availability of individualized instruction, an altered pace of learning, personalized learning goals, cooperative learning, and peer and cross-aged tutoring (Little et al. 1991). Ideally, the cooperative/co-teaching instructional model would be the most appropriate instructional approach to use to address the learning needs of these adolescents in the classroom.

Classroom teachers felt positive about the desirability and effectiveness of making instructional adaptations for these adolescents but in the classroom they were found unlikely to modify their traditional whole class instructional methods (Scott, Vitale, & Masten, 1998). Some adolescents with mild mental retardation reported that when the teacher did not adapt instruction to meet their needs and when they received special accommodations

they felt stigmatized in the presence of their peers (Spencer & Garrick-Duhaney, 1999). Since instruction in the classroom is toward large groups it is generally undifferentiated and the special individualized adaptations appropriate to address the learning needs of adolescents with mild and moderate mental retardation may not be implemented (Marston, 1996; Scott et al. 1998). Clearly, including these adolescents in the classroom without resources, support, teacher preparation time, commitment, a vision statement, restructuring, and staff development will not work (O'Neil, 1995).

Combined Services

There are several instructional models in which the special education teacher serves as a consultant to the classroom teacher. In some schools, the special education teacher may enter the classroom to instruct the adolescent with mild and moderate mental retardation. In other schools, the special education teacher might suggest instructional strategies to the classroom teacher to use to help the adolescent with mild and moderate mental retardation in the classroom. While in still other schools the special education teacher and the classroom teacher work together in the classroom (co-teach) on a daily basis. Clearly, the role of the special education teacher in relation to addressing the learning needs of adolescents with mild and moderate mental retardation is changing. The key element in this new role is collaboration between the special education teacher and the classroom teacher.

These adolescents will need a combination of resource room instruction and placement in the classroom, and the special education teacher will be expected to assist the classroom teacher to modify the curriculum to accommodate their needs. Without collaboration among these teachers a well-developed curriculum may not succeed in addressing the learning needs of these adolescents. For example, physical education classes, recess, and lunch are considered optimal opportunities for enhancing social interactions between adolescents with mild and moderate mental retardation and other adolescents in the classroom. However, without collaboration between special education and classroom teachers regarding the specific social skills needing reinforcement, this rich medium for social behavior development is underutilized (Ellis, Wright, & Cronis, 1996).

Summary

Adolescents with mild and moderate mental retardation will need to avail of more than one placement to have their learning needs addressed. Presently, most of these adolescents are placed in the classroom and receive instruction on an individual basis or in small groups from the special education teacher in the resource room. However, there is a growing trend toward increasing the amount of time adolescents with mild and moderate mental retardation spend in the classroom and educators should be cautious about jumping on the bandwagon. The classroom is not always the most appropriate learning environment

in which to address the students' learning needs and placement decisions should be made on a student by student basis (Kauffman, 1993). If the learning needs of these adolescents are to be addressed in the classroom teachers will need intense inservice and supports, and they and the special education teachers will need to develop effective collaboration skills.

Conclusion

Learning environments for adolescents with mild and moderate mental retardation are beginning to reflect the awareness that a variety of learning needs exist among these individuals. This awareness is no better demonstrated than in the development of an IEP for each student. However, the adaptations and modifications commonly applied to the prescribed curriculum, used in the classroom may not be enough to address the learning needs of adolescents with mild and moderate mental retardation. The greatest criticism of the present IEPs is the amount of emphasis on academics over other learning needs, such as learning strategies, metacognitive skills, motivational issues, and social competence. There has been success using more cognitive process approaches to help adolescents with mild and moderate mental retardation learn these skills and to become motivated to be more responsible for their own learning.

The use of less whole class/group instruction in the classroom and more cooperative learning groupings has resulted in improved social interactions between adolescents with

mild and moderate mental retardation and other students in the classroom (King-Sears & Cummings, 1996; Brown & Campione, 1994; Bender, 1996). Although the research is not conclusive, most educators agree that the learning needs of adolescents with mild and moderate mental retardation are best addressed through small group instruction in a combination of placement in the resource room and the classroom. Educators who are involved in the curriculum, instruction, and placement of adolescents with mild and moderate mental retardation must have adequate in-service and support (Wolery, Gessler-Werts, Caldwell, Snyder, & Lisowski, 1995) Unfortunately, there is little evidence in the research findings to indicate educators are being properly trained and given adequate supports and resources to provide effective instruction within the classroom. Without these supports and resources teachers will not be able to provide appropriate learning environments for adolescents with mild and moderate mental retardation. As a result, improvement in the cognitive processing and social-emotional development of these adolescents will remain minimal and inadequate for independent living beyond the school years.

Adolescents with Mild and Moderate Mental Retardation:

How well are their learning needs addressed in Newfoundland schools?

Introduction

The purpose of this paper is to discuss how effectively the learning needs of adolescents with mild and moderate mental retardation are being addressed in the schools in Newfoundland. The paper will begin with a synopsis of the research findings about the learning needs of adolescents with mild and moderate mental retardation and how these learning needs are best addressed in the school system. Then, Newfoundland's special education policy will be examined to determine if it provides a framework that can accommodate the learning needs of these adolescents. If an appropriate framework exists then what obstacles are interfering with implementing the special education policy at the school level? In the conclusion, recommendations will be suggested that could improve the learning environments for adolescents with mild and moderate mental retardation. Some areas where future research is warranted will be identified.

Research Findings

The focus of this research review has been adolescents with mild and moderate mental retardation, that is adolescents with IQ scores between 35-70, enrolled in grades 7-12 in the school system. The inefficiency and ineffectiveness of the cognitive processing abilities and attention problems of these adolescents prevent them from acquiring new

knowledge and skills as easily as adolescents without mental retardation (Brown, 1974; Cherkes-Julkowski & Gertner, 1989). These learning deficits can be reduced if new materials are presented more effectively (instruction) and the students are trained to use strategies to enhance their learning and memory (Forness & Kavale, 1993). The curriculum in the junior and senior high grades emphasizes subject content and presents a major problem for these adolescents (Ferretti & Cavalier, 1991; Wenz-Gross & Siperstein, 1996). Most adolescents with very mild mental retardation can have their learning needs addressed in the classroom through adaptations and modifications of the prescribed curriculum (Scott et al. 1998; Jacobsen & Sawatsky, 1993). Other adolescents with mild and moderate mental retardation will require an alternate curriculum emphasizing basic reading and math skills, learning strategies, metacognitive awareness, and social competence. The research suggests that individuals with mild and moderate mental retardation may be more capable in the adolescent years than in pre-adolescent years of acquiring basic reading and math skills (Podell et al. 1992; Perry et al. 1992; Gottardo & Rubin, 1991).

By adolescence many of these students have developed negative attribution patterns (Turner et al. 1994) and are not motivated to learn (Gersten & Baker, 1998). As a result, adolescents with mild and moderate mental retardation tend to withdraw from cognitively demanding learning situations. To motivate these adolescents, the assigned tasks must be both interesting and within the student's ability level or "zone of proximal development" (Dev, 1997; Adelman & Taylor, 1990). In the adolescent years basic math skills and

reading skills are best learned when integrated with functional life skills and vocational skills (Logan & Malone, 1998; Hamre-Nietupski, 1993; Mastropieri et al. 1997).

Teaching adolescents with mild and moderate mental retardation about the thinking processes involved in learning, that is metacognition, has been reported to result in improvement in academic areas (Baker, 1994; Duell, 1986). In teaching these adolescents to understand their individual strengths and weaknesses and to develop a plan to achieve realistic goals for the future, educators will be teaching them to develop self-determination, a characteristic lacking among adolescents with mild and moderate mental retardation (Wehmeyer, 1992). On a simplistic level, self-determination refers to having some say in how you live your life, and adolescents with mild and moderate mental retardation can develop self-determination skills in school by having opportunities to make choices in areas where their health and safety are not jeopardized. For example, the adolescent with moderate mental retardation can develop self-determination by being encouraged to make choices such as selecting leisure activities, foods, and music. Adolescents with mild mental retardation should be encouraged to participate in selecting goals and objectives for their IEPs and to advocate for needed support services. Curriculum that addresses personal safety, understanding one's individual rights, assertiveness training, communication skills, social skills, sex education, and self-defense will contribute to developing self-determination (Lamorey & Leigh, 1996).

Adolescents with mild and moderate mental retardation experience difficulty in both building and maintaining peer relationships, and problem-solving (Wenz-Gross & Siperstein, 1996; Bradley & Meredith, 1991; Healey & Masterpasqua, 1992). It is essential that social skills and problem-solving skills become an integral part of their curriculum to insure their successful transition into the community beyond the school years (Castles & Glass, 1986). The link established between deficits in social competence and the failure of these individuals to adjust into the community is too strong to ignore (Langone et al. 1995). Educators must provide explicit instruction and training in both social skills and problem-solving skills (Hallenbeck & Kaufman, 1995). The research favors cognitive process approaches to the teaching of both social skills and problem solving skills (Rosenthal-Malek & Yoshida, 1994; McFall, 1982). Unlike other approaches for the teaching of social skills which focus on teaching specific social skills, the cognitive process approach focuses on a generative process for social interaction that can be adapted to all social situations (Brown, 1987; Collet-Klingenberg & Chadsey-Rusch,1991). Self-interrogation is an example of a cognitive process approach which encourages the student to stop, think, and use a set of questions (self-talk) to help him/her interpret and respond appropriately in any social situation. Initially, the cognitive process approach would be taught by the special education teacher in a setting other than the classroom but opportunities for the transfer and generalization of the process must be provided in the classroom (Bishop & Jubala, 1994; Vaughn et al. 1991).

Educators in Canada and the United States are moving more and more toward developing IEPs to address the learning needs of individuals with mental retardation (Turnbull et al. 1978b; Bender, 1996). An IEP outlines the curriculum, instruction, and placement that will be used to address the student's learning needs. The IEP can be delivered in the classroom, small group instruction in the resource room, and in a one-to-one teaching situation, depending on the learning needs being addressed. Many of the learning needs of adolescents with mild and moderate mental retardation, such as social skills and problem-solving skills, are best taught by the special education teacher through small group instruction in the resource room (Jacobson & Mulick, 1996). The instructional strategies used by the teacher are more important than the size of the instructional group (Jacobson & Mulick, 1996). Both the classroom teacher and the special education teacher need to use instructional strategies which keep all students engaged in learning while the teacher provides individualized instruction to students experiencing difficulty.

The special education teacher can provide individualized instruction within the small group by using the Task Card Approach (Bender, 1996). In the Task Card Approach each student is given a card which clearly states the assigned tasks for him/her during the class period or day (depending on the student's scheduled time in the resource room). Each student works independently while the teacher navigates within the group providing individual help as required. The assigned tasks are determined according to the student's

individual learning needs but the amount of individualized instruction is determined by the size of the group and the degree of difficulty experienced by the students.

Classroom teachers have had success integrating adolescents with mild and moderate mental retardation in the classroom by using less whole class instruction and more instructional groupings, such as cooperative learning groups and reciprocal reading groups (Schniedewind & Salend, 1987; Collins et al. 1989). However, the success of these instructional strategies depends on the ability of the classroom teacher and the special education teacher to work together collaboratively (Zigmond & Baker, 1996; Stanovich, 1996). Instructional arrangements that involve the classroom teacher and the special education teacher sharing the total responsibility for curriculum planning and delivery provide the optimal opportunity for addressing the learning needs of adolescents with mild and moderate mental retardation in the classroom (Carlson & O'Reilly, 1996). The research suggests that addressing some of the learning needs of these students in the classroom will only work in schools where resources, supports, teacher preparation time, and staff development are given top priority (O'Neil, 1995; Wolery et al. 1995).

Summary

The research review suggests that the learning needs of adolescents with mild and moderate mental retardation can be addressed in learning environments where appropriate

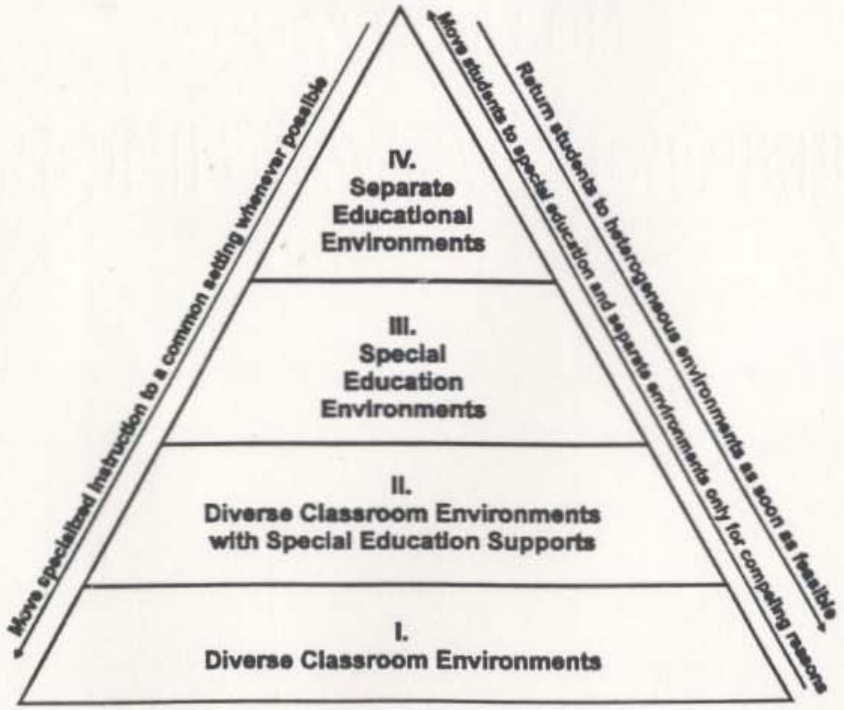
curriculum, instruction, and placements are provided. The prescribed curriculum used in the classroom will need to be adapted and modified according to the student's learning needs. An alternate curriculum should include instruction and training in learning strategies, metacognitive skills, and the development of social competence. Teachers will need to employ a variety of instructional strategies in order to accommodate such diverse learning needs within the classroom. A combination of resource room and classroom placement will be needed to provide maximum opportunities for the transfer and generalization of learning. As well as providing appropriate curriculums, instruction, and placements, educators must be willing to accept diversity among the students in the classroom. Most important, special education and classroom teachers will need to work collaboratively to address the learning needs of these adolescents. Does the special education policy in Newfoundland provide a framework in which such learning environments can be created to address the learning needs of adolescents with mild and moderate mental retardation?

Special Education Model

In 1987 the Department of Education introduced a special education policy intended to address the learning needs of all students in Newfoundland schools. The special education policy was based on Reynolds & Birch's (1977) "Cascade of Services" model

which recommended that, "exceptional students should receive their education in the most enhancing educational setting, based upon an assessment of their educational needs" (Canning, 1996, p.10). In the "Cascade of Services" model, four instructional settings are proposed to address the learning needs of all students (see Figure 1).

Figure 1: Instructional Settings



(From "Special Education Policy Manual," Department of Education, 1987, p.2.A.4(2), Government of Newfoundland and Labrador)

According to the "Cascade of Services" model, the learning needs of most students should be addressed in the classroom. The bidirectional arrows imply that a number of learning environments are available to address the learning needs of students and that placements in settings other than the classroom are seldom static. For example, the classroom, called the "Diverse Classroom Environment" is where all students should begin their education using the prescribed curriculum. The word "diverse" implies every effort would be made to address the student's learning needs within the classroom. These would include employing a variety of instructional strategies, appropriate curriculum resources, differential evaluation, etc..

Implementation of the Special Education Policy

The implementation of the "Cascade of Services" model in the late 1980s resulted in drastically reduced numbers of students in Newfoundland schools receiving instruction in segregated settings. Adolescents with mild and moderate mental retardation, often identified as "cognitively delayed" or "core special education students", began to receive most of their instruction in the classroom. For example, 8.1% of these students received instruction in segregated special classes in 1988-89 compared to 0.6% in 1991-92 (Department of Education, 1994-1995). In just a few years substantial changes occurred in the demographics of the classroom. Educators expressed great concern about the effects

of the "Cascade of Services" model on both the classroom and special education. It was not until five years later that the Department of Education, Division of Student Support Services (1992) revised the *Special Education Policy Manual* to included detailed descriptions of matters pertaining to special education from defining the responsibilities of the Department of Education to further delegating specific responsibilities to school districts and to the schools. At the school level, classroom teachers and special education teachers are required to be actively involved in the assessment of the student's learning needs. Programming for the student is determined by a "program planning process" that involves three detailed steps:

(1) screening and identification

(2) referral and assessment

(3) program implementation

The "program planning process" is a process that the Division of Student Support Services directed educators to use to clearly identify students whose learning needs warranted special education services. (For a detailed discussion of the "program planning process" see the *Special Education Policy Manual*). The first step in the process requires that classroom teachers collect data on the student's learning needs and try different instructional strategies in the classroom to address these learning needs.

Special education services are considered when it has been demonstrated that the student's learning needs are not being addressed in the classroom. When special education service is deemed necessary to address the student's learning needs it could be provided

either directly by the special education teacher in the classroom or indirectly through consultation with the classroom teacher. When the classroom teacher neither alone nor with the support of the special education teacher could address the student's learning needs in the classroom, then a more intense individualized program could be provided in a special education environment (resource room). According to the special education policy, only students with severe learning needs, such as deafness, blindness and behavior disorders should attend a separate educational environment. For example, the School for the Deaf provides specialized curriculum and instruction for students with severe hearing loss. However, students with lesser degrees of hearing loss, blindness, and behavior problems remained the responsibility of the classroom teacher. Clearly, educators in Newfoundland are expected to accurately identify the students' learning needs and to employ a variety of instructional strategies to address these learning needs in the classroom whenever possible.

Obstacles to Special Education Policy Implementation

The special education policy was implemented without any consideration given to either the willingness or the capability of classroom teachers to address the special learning needs of students in classrooms. Perhaps some of the learning needs of adolescents with mild and moderate mental retardation were not being addressed in classrooms due to teacher inflexibility or unwillingness to modify course objectives, use a variety of instructional

strategies, and to provide differential evaluation. The Department of Education not only failed to monitor the instructional strategies used by classroom teachers but it also failed to acknowledge the need for a professional development program to assist teachers in this new requirement.

In 1995, a combined effort was made by the Newfoundland and Labrador Teachers' Association (NLTA), Denominational Education Councils (DEC), Department of Education, and Memorial University to make participation in professional development mandatory for teachers. It was recognized that Newfoundland had an aging teaching population and most of the teachers had been trained in the 1960s and 1970s when the need for a variety of instructional strategies was not emphasized. Therefore, a new teacher certification policy that incorporated professional development and teacher certification was proposed for both teachers in the system and beginning teachers. Unfortunately, teachers in the system were outraged that they would be required to upgrade their teaching qualifications and adamantly rejected the proposal (E. Burry, personal communication, September 23,1999). The Department of Education did not pursue the proposal or devise another means to ensure that teachers in the province are adequately prepared to address the special learning needs of students in the classroom. Newfoundland's teachers are certainly in need of professional development but the Department of Education must take aggressive steps to ensure that appropriate professional development is provided and that teachers participate in professional development.

Most educators in Newfoundland reported that they supported the special education policy but were not supportive of the manner in which the policy was implemented (Canning, 1996). The special education policy was implemented without teachers being first trained in "how" to provide for the learning needs of all students in the classroom. The classroom teacher is expected to adapt and modify curriculums, employ a variety of instructional strategies, and deal with social and emotional behaviors typical of students in an earlier developmental stage. To further complicate the situation, the Department of Education in 1995 reduced the number of program consultants at the school district level and consequently deprived teachers of valuable resource persons who could provide the curriculum expertise and professional development needed to address the learning needs of these students (R. Martin, personnel communication, September 25, 1999).

In addition to understanding the student's learning needs, the classroom teachers and special education teachers are expected to work collaboratively to address these needs. The special education teacher is expected to supply the expertise regarding "how" to address the student's learning needs in the classroom even though more than 50% of the special education teachers in Newfoundland do not have a degree in Special Education (Department of Education, 1994-1995). In fact, neither classroom teachers nor special education teachers are trained in effective collaboration techniques. In 1995, as a result of a recommendation from the Royal Commission of Inquiry into the Delivery of Programs and Services in Primary, Elementary, Secondary Education (1992), the Department of Education funded a

Provincial Professional Development Centre. The Provincial Professional Development Centre surveyed teachers throughout the province and identified over 150 areas in education that teachers felt should be addressed in professional development (C. McCormack, personal communication, September 7, 1999). However, after a year and a half the Provincial Professional Development Centre dissolved as a result of losing government funding. Considering that the Department of Education is presently examining ways to improve the curriculum used in the schools throughout Newfoundland, it may be a wise decision to reactivate the Provincial Professional Development Centre and let it begin to provide the much needed professional development for teachers.

The research suggests collaboration between special education and classroom teachers to provide adequate learning environments for adolescents with mild and moderate mental retardation (Zigmond & Baker, 1996; Stanovich, 1996) but there is little opportunity for collaboration between these teachers. Special education teachers generally have less preparation time (prep time) than classroom teachers, and many challenging needs teachers, such as the writer, have no scheduled prep time to consult with other teachers. Collaboration among teachers is further hampered by the fact that subject teaching dominates in the junior and senior high levels and these adolescents may receive instruction from as many as 8 or 9 teachers. In essence, the required course modifications are not being done and these adolescents are participating in courses well beyond their learning abilities (Canning, 1996). Clearly, the Department of Education has not only failed to provide

adequate teacher inservice but it has also failed to give teachers adequate preparation time to collaborate to better address the students' learning needs.

The poor implementation of the special education policy at the school level may have had a greater impact on adolescents with mild and moderate mental retardation in the junior and senior high grades than on students with mild and moderate mental retardation in the lower grades. The learning needs of students with mild and moderate mental retardation are better accommodated in the lower grades because both classroom teachers and special education teachers focus on the teaching of basic skills: reading, writing, spelling, and mathematics (Canning, 1996). The research findings reviewed support a continued emphasis on basic reading and math skills for these adolescents in the junior and senior high grades because their cognitive processing abilities may be more developed in the adolescent years to enable them to acquire these skills (Podell et al. 1992; Perry et al. 1992; Gottardo & Rubin, 1991). However, in the junior and senior high grades the focus of the prescribed curriculum is on subject content and these adolescents experience extreme difficulty due to learning at a slower pace and comprehending on a lower reading level than their peers in the classroom.

Current Practice

Presently, adolescents with mild and moderate mental retardation in the junior high grades throughout the largest school district in Newfoundland, the Avalon East School District, receive either an alternate Language Arts and/or Math program in place of the prescribed Language Arts and Math curriculum used in the classroom, or a watered down version of the prescribed curriculums. In reality, an alternate program translates into the student receiving small group instruction in Language Arts and Math from the special education teacher in the resource room. These adolescents are then placed in the classroom where they are expected to use the prescribed curriculum for other subject areas, such as Social Studies, Science, Religion, etc., even though they read at a level that is significantly below grade level. Researchers have expressed great concern about the difficulty these adolescents experience acquiring new knowledge and skills especially in the junior and senior high grades when the emphasis is on subject content (Ferretti & Cavalier, 1991; Wenz-Gross & Siperstein, 1996).

At the senior high level, adolescents with mild and moderate mental retardation are on either a work experience program or a transitional program (G. Anderson, personal correspondence, September 18, 1999). The work experience program, designed to address the learning needs of adolescents with moderate mental retardation, is geared toward independent living. In the work experience program the emphasis is on developing practical

math/language skills and vocational skills. As well as receiving small group instruction for math/language skills these adolescents participate in job placements in the community. Also, they are often integrated into the classroom for courses such as Computers, Industrial Arts, Physical Education, and Home Economics. With appropriate support in the classroom and collaboration between the special education teacher and the classroom teacher, participation in these courses could provide opportunities for the transfer and generalization of learning strategies (Forness & Kavale, 1993), metacognitive skills (Baker, 1994: Duell, 1986), and social skills (Bishop & Jubala, 1994: Vaughn et al. 1991).

The transitional program, designed mainly to address the learning needs of adolescents with mild mental retardation, is designed to help the student obtain a high school graduation certificate with a minimum of 36 credits. Students in the transitional program drop elective courses to allow more time to cover the prescribed curriculum for language and math credits. The Language and Math courses are taught by the special education teacher but currently enrollment in transitional courses is not restricted to students with mild and moderate mental retardation. School administrators often assign special education teachers to teach courses to students who did not qualify for such services (Canning, 1996). As a result of teaching courses to students who do not qualify for special education services, these special education teachers are not available either to assist classroom teachers modify courses or to provide the needed instruction and training in learning strategies, metacognitive awareness, and social skills. In some high schools the

practice of using special education teachers to instruct students other than those who qualify for special education services is continuing (G. Anderson, personal correspondence, September 18, 1999). A system needs to be put in place to insure special education teachers are addressing the learning needs of those students for whom they have been allocated. However, this practice will change when Pathways (discussed later in this paper) is fully implemented and special education teachers will not be permitted to provide instruction for students with an IQ above 70 (Department of Education, Division of Student Support Services, 1998). Other than receiving English and Math instruction from the special education teacher these adolescents spend the remainder of the day placed in the classroom struggling with the prescribed curriculum without special education support. Classroom teachers do not know enough about the cognitive abilities of adolescents with mild and moderate mental retardation and as a result their learning expectations for these students are either too high or too low (Canning, 1996). The research findings suggest that these adolescents can achieve a degree of success in the classroom when the classroom teacher and the special education teacher work together collaboratively using instructional learning groupings within the classroom (Zigmond & Baker, 1996; Stanovich, 1996). Instructional groupings within the classroom may be an alternative arrangement that would encourage social interaction and tolerance of students with special needs in classrooms (Gelzherser et al. 1998: Helmstetter et al. 1998) but such groupings would be difficult to arrange in Newfoundland classrooms where the average pupil-teacher ratio is over 25:1. Considering

the attention problems experienced by adolescents with mild and moderate mental retardation, the presence of many instructional groupings in an overcrowded classroom would not be conducive to learning.

The special education policy as implemented cannot provide for all of the learning needs of adolescents with mild and moderate mental retardation in the classroom. According to the research findings these adolescents are most ready in the adolescent years to acquire basic reading and math skills and therefore it is necessary to continue the emphasis on the acquisition of these skills throughout the junior and senior high grades. While integration into the classroom does provide the opportunity for social interaction with peers who do not have mental retardation, it may not be the most appropriate placement for these adolescents to achieve success in basic academics. The suggested adaptations and modifications to the prescribed curriculum cannot always be provided by the classroom teacher in the classroom. The small group instructional setting provided by a special education teacher in the resource room is the most appropriate placement to address learning needs associated with basic reading and math skills (Jacobsen & Sawatsky, 1993). The gap between the prescribed curriculum used in the classroom and the curriculum needed to address the learning needs of adolescents with mild and moderate mental retardation is too wide to expect both curriculums to be addressed in the classroom. In the junior and senior grades the classroom teacher cannot provide the continuous emphasis on the basic concepts which these adolescents need to consolidate learning.

The research findings support the integration of these adolescents into the classroom for opportunities to transfer and generalize the social skills learned in the resource room (Bishop & Jubala, 1994; Vaughn et al. 1991). There is ample opportunity for integration into the classroom via courses such as Computer Technology, Industrial Arts, Home Economics, etc.. However, there is still a need for collaboration between the special education teacher and the classroom teacher to insure that integrating these adolescents into the classroom provides opportunities for appropriate social interactions with the other students.

Integration should not happen for the sake of integration. Too often decisions to integrate these adolescents result from pressure from advocacy groups and the financial restraints at the time (Chow, 1996). In the adolescent years, explicit instruction and training in learning strategies, metacognitive skills, and developing social competence are so important that the practice of integrating these students into the classroom for minimal participation in the prescribed curriculum should be reevaluated. For example, can integration be justified for the 15-year-old who colors a map of Japan while his peers write answers to questions about Japan's economy? Are his learning needs being addressed in this learning environment? On the contrary, such learning environments may lower the student's feeling of self-worth and motivation to become actively involved in the learning process. The student's time might be better spent with a special education teacher working on his learning needs through small group instruction in a resource room. If most of these

adolescents are spending the majority of their school day integrated into classrooms using the prescribed curriculums it is not surprising that adolescents with mild and moderate mental retardation in Newfoundland were found to be among "the least served of those needing special education, especially at the high school level" (Canning, 1996, p.77). Clearly, the appropriate curriculum, instruction, and placements recommended in the research findings have not been provided for these adolescents.

To address the learning needs of adolescents with mild and moderate mental retardation, the research supports adapting and modifying the prescribed curriculum (Scott et al., 1998; Jacobsen & Sawatsky, 1993) and providing alternate courses in basic reading and math (Podell et al. 1992; Perry et al. 1992; Gottardo & Rubin, 1991), learning strategies (Forness & Kavale, 1993), metacognition (Baker, 1994; Duell, 1986), and social competence (Wenz-Gross & Siperstein, 1996; Bradley & Meredith, 1991; Healey & Masterpasqua, 1992). Both special education teachers and classroom teachers in Newfoundland schools reported having no training in "how" to modify courses since most of these teachers were trained at a time when the emphasis was not on the integration of students with special needs into classrooms (Canning, 1996). Most teachers feel that course modification is further complicated by the Department of Education's insistence that modifications be specific to each student, that is, an individual curriculum for all students.

While individual differences among adolescents with mild and moderate mental retardation should be acknowledged, this does not mean that a common curriculum could

not be used. The Department of Education should provide a curriculum to address the common learning needs of these adolescents, namely, basic reading and math skills, learning strategies, metacognitive skills, and the development of social competence. However, instead of providing course supplements, guides, and an alternate curriculum designed to address the learning needs of these adolescents, the Department of Education added to the workload of already heavily burdened teachers by expecting them to adapt and modify the prescribed curriculums used in the classroom for each and every student. This is certainly not the way to gain the support of the classroom teacher. From my experience I have found that teachers are more willing and able to cooperate when they have prescribed formats/routes to follow. In most of the large junior and senior high schools located in St.John's and Mount Pearl, subject teaching is the norm and most classroom teachers provide instruction for 150 or more students on a daily basis (A. Singleton, personal communication, September 10, 1999). Realistically, how can these teachers be expected to accommodate the learning needs of adolescents with mild and moderate mental retardation in the classroom without an appropriate curriculum?

Alternate courses are needed but with the limited special education time allotted to address the learning needs of adolescents with mild and moderate mental retardation the problem remains when, where, and who should teach these courses. Educators involved in the junior and senior high schools throughout rural Newfoundland have witnessed a steady decline in the number of basic courses available to their students. While courses

such as Vocational Math and Language, Home Economics, Earth Science, and Industrial Arts are listed in the provincial *Program of Studies,* the availability of these courses varies from school to school. In some high schools the Work Experience Program, designed to provide vocational skills for adolescents with mild and moderate mental retardation, fell by the wayside when Co-operative Education was introduced. Adolescents with mild and moderate mental retardation can learn vocational skills in Co-operative Education but the required pre-employment preparation component of the program is academically challenging and more appropriate for adolescents without mental retardation (J. Hennebury, personal communication, September 12, 1999). Some high schools encourage these adolescents to get involved in the work experience component of Co-operative Education but the amount of involvement varies from school to school and depends largely on the amount of encouragement the student receives from his/her teachers (J. Hennebury). Unfortunately, the viability of Co-operative Education is presently uncertain due to decreased funding from the Federal Government and the reluctance of the Department of Education to provide the extra funding needed to continue the program (J. Hennebury).

Paraprofessionals, such as student assistants, are needed to assist teachers to implement the curriculum adaptations and modifications outlined in IEPs of students who are capable of doing the prescribed curriculum in the classroom. However, the Department of Education continues to allocate student assistants only for students with either a serious medical need or a severe behavioral problem. Adolescents with mild and moderate mental

retardation who need student assistant support in order to be successfully integrated into the classroom, are denied such services (J. Powell, personal communication, September, 23, 1999). Clearly, the Department of Education provided a framework in which the learning needs of adolescents with mild and moderate mental retardation could be addressed but failed to provide the personnel and resources needed to successfully implement the policy at the school level. The "Cascade of Services Model" has the potential to provide appropriate learning environments for these adolescents, but at the present time, these learning environments are far from adequate. To offer the level of special education service implied by the 'Cascade of Services' model the Department of Education needs to provide appropriate curriculum, resources, and supports to enable these students to experience success both in the resource room and the classroom or "diverse classroom environment."

Categorical Special Education

Presently, adolescents whose cognitive functioning is at the lower end of moderate (IQ below 50) and whose adaptive functioning is severely impaired may be eligible for special education services from "categorical" special education teachers. "Categorical" special education teachers, often referred to as "Challenging Needs" teachers, are allotted to schools to provide for the learning needs of specific students who meet the stringent

criteria. Usually, 1/4 teaching unit is allotted per student to a maximum of one teacher per six students (Department of Education, Division of Student Support Services, 1992). It appears that adolescents with moderate mental retardation who qualify for "categorical" special education have a greater chance of having their learning needs addressed than adolescents with mild and the upper range of moderate mental retardation. The small group instruction and increased time with a special education teacher provides the opportunity for explicit instruction and training that the research suggests is needed for the development of basic reading and math skills, learning strategies, metacognitive skills, and social skills. Canning (1996) found that students eligible for "categorical" special education teaching units were most likely to avail of a continuum of services, that is, a combination of both specialist programming and integration in the classroom whenever appropriate. But, the Department of Education failed to provide a curriculum for students with challenging needs. "Categorical" special education teachers reported having to spend an inordinate amount of time developing curriculum units for these students to use in both the classroom and the resource room (Canning, 1996).

From my experience as a "Categorical" special education teacher there is little, if any, time for collaboration between the "categorical" special education teacher and the classroom teachers to develop curriculum goals and objectives for adolescents with mild and moderate mental retardation. Contrary to the research findings stressing the importance of collaboration between special education teachers and classroom teachers,

the Department of Education provided no training for teachers to learn effective collaboration techniques to help them work together to address the learning needs of these adolescents. Further, the lack of professional development by both school boards and the Department of Education limits opportunities for communication among special education teachers and subsequently limits the sharing of resource materials that normally transpires when these teachers interact. Yet, the Department of Education continues to claim that it offers a continuum of services to address the learning needs of all students.

Individual Support Services Plan (ISSP)

Most recently, in response to concerns from teachers about addressing the special learning needs of students in the classroom, the Department of Education, Division of Student Support Services has developed a number of handbooks to facilitate the program planning process outlined in the *Special Education Policy Manual.* The first handbook *Programming for Individual Needs: Individual Support Services Plans* appeared in 1996 four years following the revised *Special Education Policy Manual.* The Individual Support Services Plan (ISSP) replaces the Individual Program Plan (IPP). The purpose of *Programming for Individual Needs: Individual Support Services Plans* was to (1) describe the support services planning process, (2) stress for educators the necessity of collaboration among all agencies involved with the student, (3) ensure a continuity of services

throughout the student's life, and (4) address issues regarding writing an Individual Support Services Plan (ISSP). It followed that each student receiving special education services would have an ISSP clearly stating the subject area where support is needed and the type of support needed. Student involvement in program planning meetings was recommended and the research supports encouraging such involvement for adolescents with mild mental retardation as one way to help them develop self-determination, a characteristic found deficient among adolescents with mild and moderate mental retardation (Wehmeyer, 1992).

Pre-referral Intervention

Upon close examination of the supports listed in students' ISSPs, it was apparent to the Department of Education, Division of Student Services that many of the supports students require to succeed using the prescribed curriculums are minimal and should be addressed in the classroom, that is the "diverse classroom environment." Consequently, the Department of Education, Division of Student Support Services (1997) updated *Programming for Individual Needs: Pre-referral Intervention (Revised)* to further assist educators to work collaboratively to address the special learning needs of students in the classroom before referring them for special education support. This document lists numerous instructional strategies educators could employ to address the learning needs of students in the classroom. Clearly, the Department of Education supports the classroom

or "diverse classroom environment" as the most appropriate setting for addressing the learning needs of most students. However, it is not enough for the Department of Education to forward neatly packaged documents to teachers. On the contrary, teachers need to learn "how" to apply these instructional strategies in the classroom and they need resources/supports on a continuous basis if they are to address some of the learning needs of adolescents with mild and moderate mental retardation in the classroom.

Undoubtedly, most experienced educators possess a repertoire of instructional strategies that they unconsciously draw from daily, to address the learning needs of students in their classroom. However, because of being inadequately prepared to implement the special education policy, teachers may lack confidence in their ability to address some of the learning needs of these students in the classroom. Similarly, educators may be reluctant to share their expertise with their colleagues in a collaborative manner because they are insecure and may feel that acknowledging a need for assistance will reflect negatively on their ability to teach. The Department of Education should consider that for a long time teachers have been working in isolation. For example, teachers may discuss an unruly student's behavior with a colleague but they seldom share "how" they deal with the student's behavior or ask "how" the colleague might approach the student's behavior. Unfortunately, there is very little sharing of what transpires beyond the closed classroom door.

Pathways

The continuum of services is more clearly outlined in the most recent document forwarded to both teachers and administrators from the Department of Education, Division of Student Support Services (1998) *Pathways to Programming and Graduation.* In *Pathways to Programming and Graduation* five program options or pathways are provided to address the learning needs of all students:

Pathway 1	Provincially prescribed programs
Pathway 2	Provincially prescribed programs with additional supports
Pathway 3	Modified programs
Pathway 4	Alternate programs
Pathway 5	Alternate curriculum

Adolescents with mild mental retardation could essentially be on Pathways 2, 3, and 4 depending on their learning needs. The learning needs of adolescents with moderate mental retardation would be more appropriately addressed in Pathways 3, 4, and 5. However, the amount of special education support the student receives is directly related to the Pathway and priority is given to students on Pathway 5, then 4, 3, and 2. For example, an adolescent with mild mental retardation on Pathway 2 would be expected to use the prescribed curriculum with the adaptations and accommodations described in an ISSP but delivered in the classroom by the classroom teacher. Essentially, programming

for adolescents with mild mental retardation on Pathway 2 is the responsibility of the classroom teacher and, depending on the special education teacher's workload, there may or may not be an opportunity for collaboration between the classroom teacher and the special education teacher. Yet, the classroom teacher is still not trained in "how" to adapt or modify the curriculum and neither the special education teacher nor the classroom teacher is trained in effective collaboration techniques. It is not realistic for the Department of Education to suggest Pathway 2 as an appropriate placement for students requiring curriculum adaptations and modifications when it has not first provided proper training for classroom teachers. However, the research contends that the learning needs of adolescents with very mild mental retardation can be addressed in the classroom through adaptations and modification to the prescribed curriculum (Scott et al. 1998; Jacobsen & Sawatsky, 1998).

In Pathway 3 the special education teacher is expected to work with the classroom teacher to provide both the curriculum modification and instruction for adolescents with mild and moderate mental retardation. However, in many cases the special education teacher is only available to address specific subject areas such as Reading and Mathematics and the remainder of the subjects must be modified and taught by the classroom teacher. Clearly, this is not enough special education service to address the learning needs of these adolescents and it will have a profound effect on them.

Students whose learning needs cannot be addressed using the prescribed curriculum will be on either Pathway 4 and offered alternate courses or on Pathway 5 with an alternate curriculum. It appears that Pathways 4 and 5 offer an opportunity to create an appropriate learning environment in which adolescents with mild and moderate mental retardation could receive explicit instruction and training in learning strategies, metacognitive awareness, and social skills. What is needed now is for the Department of Education to focus on developing a curriculum that is more in tune with addressing the learning needs of these adolescents.

The Department of Education has provided neither teacher inservice nor resources to effectively implement the Pathways. For example, to implement *Pathways to Programming and Graduation* a one-day teacher inservice was conducted by two school district coordinators. These coordinators introduced *Pathways to Programming and Graduation* to teams (consisting of the administrator, guidance counsellor and a special education teacher) from several schools within the district. Following this inservice each school's team presented *Pathways to Programming and Graduation* to their school's staff. Most of the inservices at the school level resulted in more questions than answers about "how" *Pathways to Programming and Graduation* is to be implemented without increases in the special education teacher allotment, appropriate resource materials, and teacher inservice (Newfoundland and Labrador Teachers' Association, 1999). Again, educators believe that *Pathways to Programming and Graduation* provides the options needed to

offer a continuum of services to address the learning needs of all students but without appropriate supports, students' learning needs will be no better addressed than through previous initiatives by the Department of Education since the implementation of the *Special Education Policy* in 1987.

The Department of Education, Division of Student Support Services' (1998) attempt to implement *Pathways to Programming and Graduation* did capture the attention of both the Newfoundland and Labrador Teachers' Association and concerned parents regarding the proposed changes in the delivery of special education services. Both parents and teachers expressed disapproval of the new eligibility criteria for special education which now require that students be assessed and show an IQ of less than 70 in order to receive special education services (Newfoundland and Labrador Teachers' Association, 1999). From the Department of Education's perspective, an IQ cutoff of 70 will increase the likelihood that only students with either a diagnosed disability or mental retardation will avail of special education services and in that way insure special education teachers are being used as intended. But from the perspective of educators and parents, a large number of students who had been receiving special education services because of reading problems, will no longer qualify for such services and their learning needs will have to be addressed by the classroom teacher in the classroom. It is interesting to note that the concerns voiced evolved around only one aspect of the students' learning environment, placement. In other words, teachers, parents, and administrators seem most concerned about "who gets them,"

meaning who, the classroom teacher or the special education teacher, is going to be responsible for addressing the learning needs of these students. There is no reference to the need to improve the curriculum and instruction used in the classroom to better address the learning needs of all students. It does not appear that the research findings about appropriate curriculum and effective instructional strategies is getting the attention of either the public or the Newfoundland and Labrador Teachers' Association. Clearly, the Department of Education needs to acknowledge that addressing the learning needs of adolescents with mild and moderate mental retardation will require an investment of both time and money to provide appropriate teacher training, supports, and resource materials. At present diverse learning needs exist in the classroom but educators have not been prepared to address the specific learning needs of adolescents with mild and moderate mental retardation. Further, the Department of Education must realize that the classroom is not always the best place in which to address all the learning needs of these students. There is a need to continually evaluate the educational programs designed to address the learning needs of these adolescents and to strive to provide the most appropriate learning environments based on sound research.

Summary

At present, adolescents with mild and moderate mental retardation are unlikely to have their learning needs addressed in the schools throughout Newfoundland. The Department of Education (1987) *Special Education Policy* and the Department of Education, Division of Student Support Services (1998) *Pathways to Programming and Graduation* provides a framework in which appropriate learning environments can be created to address the learning needs of adolescents with mild and moderate mental retardation but both initiatives have been poorly implemented at the school level. Educators have not received adequate training in instructional strategies and the resources and supports needed to provide the "diverse classroom environments" recommended in the *Special Education Policy*. Further, both special education teachers and classroom teachers are expected to work collaboratively without ever receiving training in effective collaboration techniques. Without better planning at the school level and more attention to both curriculum and instruction, *Pathways to Programming and Graduation* will not succeed in providing appropriate learning environments for adolescents with mild and moderate mental retardation.

Conclusion

The Department of Education, Division of Student Support Services (1998) *Pathways to Programming and Graduation* has the potential to provide appropriate learning environments to address the learning needs of adolescents with mild and moderate mental retardation. In light of past criticisms regarding the manner in which the Department of Education implemented changes in the delivery of special education services throughout the province, future criticism could be avoided if the following recommendations were considered. First, inservice is essential for both special education and classroom teachers. All teachers need to acquire a variety of instructional strategies and to become proficient in adapting and modifying the prescribed curriculum to address the special learning needs of students in the classroom. All teachers need to become more knowledgeable about the learning needs of adolescents with mild and moderate mental retardation. Special education teachers should be required to completed an undergraduate program in special education. Pre-service teachers should be required to complete courses that deal directly with the cognitive and social-emotional development of adolescents with mild and moderate mental retardation, instructional strategies for the integrated classroom, curriculum adaptations and modifications, and effective collaboration techniques. Presently, pre-service teachers doing the Bachelor of Education (Intermediate/Secondary) Degree at Memorial University are not required to do a single course related to students

with special needs (Memorial University of Newfoundland Calendar 1999-2000). To encourage teachers to participate in professional development the Department of Education should consider implementing some of the ideas proposed by the Teacher Certification Review Committee in 1994 (E.Burry, personal correspondence, September 23, 1999). For example, teachers should not advance to a higher level of pay unless they have completed an approved professional development program. Teachers would be more apt to attend professional development opportunities outside of school hours if it resulted in some personal gain.

Second, the pupil-teacher ratio in the classroom must be lowered to accommodate both cooperative learning and small group instruction. Third, each school district should be allocated special education teachers to act as consultants and work in the classroom with classroom teachers to help them learn to apply effective instructional strategies in the classroom. Initially, increasing the teacher allotment will be costly but the need for extra special education teachers should decrease when classroom teachers grow more confident in their ability to provide a "diverse classroom environments". Fourth, the Department of Education must provide trained paraprofessionals (student assistants) to assist the classroom teacher implement the curriculum adaptations and modifications described in the students' ISSPs. When student assistants are properly trained to assist teachers in the classroom fewer special education teachers may be required.

Fifth, schools should be required to provide adequate inservice for all teachers on effective collaboration techniques. The learning needs of adolescents with mild and moderate mental retardation are too complex to be addressed in a haphazard manner. Both special education teachers and classroom teachers need to accept and share the responsibility for addressing the student's learning needs. Once teachers have learned to collaborate effectively, opportunities must be provided for collaboration between them. Opportunities for collaboration can be created during the school day by either scheduling common prep periods or having one teacher's class covered by the administrator or a substitute teacher. A cost effective way for the Department of Education to encourage collaboration among special education teachers throughout the province is to provide a list of special education teachers' e-mail addresses and appropriate web sites (internet) that they could access from school or home computers. The use of computer technology in no way diminishes the need for the Department of Education to provide appropriate materials and resources to address the common learning needs of adolescents with mild and moderate mental retardation, namely a curriculum for basic reading and math, learning strategies, metacognitive skills, social skills, and problem-solving skills. The research findings about appropriate curriculum for these adolescents should be acknowledged and every effort should be made to provide such a curriculum.

Sixth, administrators should insure that courses, such as Home Economics, Vocational English and Math, Industrial Arts and the Work Experience program are

maintained at the senior high level to address the learning needs of adolescents with mild and moderate mental retardation. Since the research findings have implied that adolescence may be the best time for these students to acquire basic academics it is very important that special education teachers provide every opportunity for such learning to occur. Consequently, schools should be monitored to insure special education teaching units are used to teach courses to the students for whom they have been allocated.

If these recommendations are accepted, further research should be conducted to determine if enriched learning environments result for all students. For example, did adolescents with mild and moderate mental retardation become more independent learners as a result of a curriculum focus on basic reading and math skills, learning strategies, metacognition, and social competence? Were fewer students referred for special education support as a result of the teachers' use of a variety of instructional strategies in the classroom? Did reducing the pupil-teacher ratio in the classroom result in more cooperative learning groupings than whole class instruction? The research findings contend that such results are possible if appropriate learning environments (curriculum, instruction, and placements) are provided for adolescents with mild and moderate mental retardation. But the question remaining is, how committed is the Department of Education to addressing the learning needs of adolescents with mild and moderate mental retardation? The Department of Education is moving in the right direction in implementing Pathways and insisting that special education teachers be used to address the learning needs of students

with mental retardation. However, it has yet to lower the pupil-teacher ratio to an acceptable level, increase the special education teacher allotment, provide professional development for teachers and student assistants, and to supply appropriate resource materials and enough student assistants to address the learning needs of adolescents with mild and moderate mental retardation.

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